VOL. LVII MAY, 1920 NEW SERIES VOL. 10, NO. 2

JOURNAL

of the

American Veterinary Medical Association

FORMERLY

AMERICAN VETERINARY REVIEW

(Original Official Organ U. S. Vet. Med. Ass'n)

EDITED AND PUBLISHED FOR

The American Veterinary Medical Association

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THE JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION is issued the first of each month. *Manuscripts and copy for insertion should be as nearly perfect as possible for the printer and should be received by the tenth of the preceding month to insure insertion in the next month's issue.* Volumes begin in April and October.

Communications relating to publication, subscriptions, advertisements and remittances should be addressed to JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION, 1629 Hobart St., Washington, D. C. Matters pertaining to the American Veterinary Medical Association and membership should be sent to Dr. N. S. MAYO, Secretary, 4753 Ravenswood Avenue, Chicago, Illinois.

$5.00 per annum Foreign, $5.60; Canada, $5.25 Single Copies 50 cts. in U. S.

Entered as Second Class Matter, February 4, 1920, at the Post Office at Washington, D. C., under Act of March 3, 1879. Acceptance for mailing at special rate provided for in Section 1103, Act of October 3, 1917; authorized February 4, 1920.

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J. R. MOHLER, Editor, Washington, D. C.

VOL. LVII, N. S. VOL. 10 MAY, 1920 No. 2

THE VETERINARIAN AND CIVIL SERVICE

AFTER a year of strenuous labor the Joint Congressional Commission on the Reclassification of Salaries recently submitted to Congress its findings, which involves all of the 107,000 Government employes in the District of Columbia. While this report is like a ray of sunshine breaking through the clouds to the large majority of employes whom it affects, it is considered as a "blow below the belt" to the lay and veterinary inspectors of the Bureau of Animal Industry located in Washington. Although it is probable that the classification given to these two classes, especially to the veterinarian, was due to an inadvertence caused by a misunderstanding of the services rendered, it is nevertheless a fact that the latter position is not classified with that of any other scientific or technical employment in the Government service. Every other position that could be in any way considered on an equal basis is uniformly classified and the entrance salary for the junior grade is similar in every instance, namely, $1,800, whereas the entrance salary of the junior veterinarian is $1,380. In the other classifications of technical workers provision is made for promotions from the junior grade to higher grades by increments of $120 per annum for three

years, but the veterinarian who begins his service at $420 per annum below that of the junior grade of any other technical class may only be promoted by annual increments of $60. We are at a loss to understand how a commission, after reviewing the qualifications of an applicant to become eligible as a veterinary student and the rigid four-year curriculum required for his veterinary degree, could come to the conclusion that the necessary training for this position is below that of any other scientific or technical worker. There are positions classified by the commission and placed in the category of scientific and technical employment at a uniform fixed entrance salary of $1,800 that do not require the fundamental education and scientific training that the veterinarian must now receive before he is eligible to take a civil service examination for Government employment.

We are equally confused and chagrined to learn that the veterinary service is evidently considered of less importance to agriculture than any other technical or scientific service in the Department of Agriculture. This conclusion is forced upon us because every other position of a scientific or technical nature in the Department carries an entrance salary of $1,800 per annum.

It is true that the report of the Reclassification Commission applies only to employes in the District of Columbia, but it affects the administrative officers and their assistants in carrying out the various bureau activities that are now in progress throughout the United States.

One of the benefits contemplated by Congress in appointing such a commission was the evolvement of a plan which would do justice to the employes and to the Government and make Government employment attractive, not so much on account of high salaries as the assurance of just treatment and the proper recognition of efficiency. If this plan were enacted into law and administered in good faith, the young veterinarian who entered the civil service could do so with pride and with confidence that the Government would prove a just and appreciative employer. No longer would Government service be looked upon merely as a haven or as a stepping stone to permanent and better positions outside.

Realizing that in attempting a task of such magnitude mistakes and injustices might creep in, provision is made for an appeal board for the purpose of hearing complaints regarding classifications and salaries and for remedying any defects of this nature that may be disclosed. With this opportunity afforded, the Government veteri-

narians in the District are already planning an appeal from their classification and salary gradations. It is to be hoped that this apparent injustice and discrimination against veterinarians will be speedily remedied, as the morale of the service will be so shaken that it will be difficult to re-establish it unless the discrepancies are adjusted. Within the last five months the Bureau has lost 104 veterinarians, many of whom were among its best trained men. Even under present conditions, many more would sever their connections with the Bureau if it were not for the long association they have had with it and their earnest personal interest in their respective lines of work. The ties established between officials and the particular class of work they have helped to develop are frequently worth more than money. Many of the employes who have resigned indicated their willingness to remain in the Department at considerably less compensation than they were offered outside the service, but the necessary funds to retain these men were not available.

The Congressional Commission was kind enough to permit each group of employes to appear before it and present a statement of the work performed by its personnel. The Chief of the Bureau presented a schedule for all the veterinarians in one group, with an initial salary of $1,800 as in the Macey schedule, but unfortunately the commission saw fit to divide the veterinary service into three sub-classes, namely, veterinarian, veterinary bacteriologist, and veterinary pathologist, giving to the latter two sub-classes the initial salary recommended, but withholding it from the first sub-class. While veterinary bacteriologists and pathologists may be promoted to $5,040 and are eligible for the position of Chief of Bureau, the other veterinarians can reach only $3,600 and are not eligible for the ranking position.

Furthermore, the commission classified the Bureau lay inspectors, who are of great importance in the various activities of the Government, as meat inspectors, a position which was abolished several years ago. A range of salaries was specified between $1,380 and $1,620. While an entrance salary of $1,380 might be considered satisfactory, the nature of the duties performed by these lay inspectors warrants the maximum salary being placed much higher than $1,620.

This position should be graded as junior lay inspector, lay inspector and senior lay inspector, carrying salaries ranging from $1,380 to a maximum of $2,400 through the various grades—as the

commission has provided in the case of inspectors of city refuse. It should be apparent to anyone that the work of inspecting the meat food supply of the country is of far more importance than the supervision of garbage collection.

Veterinarians cannot remain satisfied with public service when they are thus discriminated against in the case of both rank and salary, and it is inconceivable how the Federal Bureau can be maintained and recruited so as to function properly when it is possible for young men to enter into any other line of scientific or technical Government work at compensations and with recognition far superior to those afforded under the proposed reclassification. And in view of the present high requirements for entering veterinary colleges and the low rating of veterinarians, it could not be expected that many young men confronted with these conditions would be attracted to the study of veterinary medicine with the intention of entering the public service.

While this reclassification will affect only the men who are in the civil service, it must be apparent that their standing as well as the standing of our colleagues in the Army is a matter of grave importance, involving as it does the recognition of the profession in general. In addition, it would eventually affect seriously the live-stock industry of the nation, as there would immediately follow a marked decrease in the number of veterinary graduates. As indicated below, the attendance at veterinary colleges has already been markedly on the wane since 1915, due partly to war conditions, increased entrance requirements and other factors.

Session	*Number of Freshmen*	*Total Attendance*	*Number of Colleges*
1915-16	1,233	2,992	21
1916-17	637	2,661	21
1917-18	338	1,841	21
1918-19	264	1,114	17
1919-20	372	1,287	17

These numbers are exclusive of 30 veterinary students at accredited agricultural colleges in 1918-1919, and 40 such students in 1919-1920.

With the discrimination and lack of appreciation shown the profession by the Reclassification Commission, it is more than probable that a further reaction will be noted in the matriculation at veterinary colleges this fall.

The service which an organization can render is determined by

the vision and ability of its responsible employes. The Government is at present in competition with and outbid by business interests, educational institutions and State agencies. Unless provision is made for speedy relief, such a condition will impair the efficiency of all activities of the Bureau and result in its failure to render that splendid service and continue that accepted leadership which the profession in general and the live-stock interests in particular have a right to expect from it. However, we have faith in the ultimate sense of fairness of Congress and no stone will be left unturned to correct the unsatisfactory and unfair classification which obtains in the recent report of the commission.

DECENNIAL PHARMACOPOEIAL CONVENTION

THE decennial convention for the revision of the last edition of the United States Pharmacopoeia will be held in Washington, beginning May 11, 1920. This convention consists of delegates appointed in accordance with the by-laws and representing various organizations that have to do with pharmacy, medicine and allied sciences, such as the State pharmaceutical associations, the American Pharmaceutical Association, the American Medical Association, the several colleges of pharmacy, the U. S. Public Health Service, the Medical Corps of both the Army and the Navy, and the Department of Agriculture.

As one of the delegates to this convention, we invite suggestions from our readers for improving this valuable treatise, by either adding to or subtracting from the present list or by elaborating upon certain drugs which have special merit in the treatment of diseases of live stock; in fact, any suggestions that may help to make this work of more value to the veterinary profession would be welcome. Prompt action in this matter is necessary if the suggestions offered are to receive attention.

The United States Pharmacopoeia is a legal standard for all the drugs listed in it. Despite its recognition by the United States Government, it is not produced by the Government. It is prepared technically by a corporation, but actually by a convention which meets each decade to revise the previous edition of the Pharmacopoeia.

An effort is to be made to complete the work in a much shorter time than was required for the last revision.

WHITE OR CALF SCOURS[1]

By W. L. WILLIAMS, W. A. HAGAN *and* C. M. CARPENTER, *Ithaca, N. Y.*

WHITE scours, calf scours or dysentery constitutes one of the most fertile of fields for differences of opinion. It has never been clearly defined and perhaps will not be for some time to come. It has received very scant attention at the hands of investigators. Veterinarians generally have views concerning it which are not clear and are difficult of expression. Breeders have taken almost no intelligent interest in it. They complain loudly about their losses, it is true, and ask the veterinarian concerning some home remedy or something the veterinarian can hand to them without bothering to see the calves, which the owner may give, turn his back and let the calf recover—or die. After the senior author had been in practice for about thirty years a breeder one day said, "I wish you veterinarians knew of something to do for white scours." I replied, "Perhaps we might do something if given an opportunity to try. I have not yet had a chance to try upon one calf."

White scours or calf scours is a term which is commonly applied to a severe diarrhea or dysentery occurring from a few hours to a few days after birth. Some writers limit the period to the interval between a few hours after birth to three or four days later. Diarrhea occurring at other times or of a mild type is commonly designated by a different name, but the line of demarcation is not clear and the limitation to such a period as indicated is purely arbitrary.

Diarrhea is common in the fetus. Physiologically, as soon as the alimentary tract is formed and the pharynx opens, the fetus commences to swallow but does not defecate. The amniotic fluid is constantly being swallowed along with any exfoliated epidermic scales or other solids suspended in the fluid. Before hairs are microscopically visible, meconium examined under a low-power lens reveals tiny short hairs which have been shed and then swallowed. The swallowed liquor amnii is promptly absorbed by the intestines, gains the fetal lymph or blood stream, and later presumably returns to the amniotic sac. The solids, such as hairs, bacteria and epithelial scales, remain behind in the intestinal canal as in a cesspool, to constitute the meconium. Since physiologically the fetus does not defecate, and constantly swallows its amniotic fluid, it follows that it is regularly clear while the allantoic fluid is frequently turbid.

[1] Paper presented at the fifty-sixth annual meeting of the American Veterinary Medical Association, New Orleans, La., November, 1919.

But the fetus, like the born animal, does not always travel serenely upon the physiologic path. Nearly half the uteri of pregnant abattoir cows contain bacteria which have the power to, and do, penetrate the chorion, contaminate the amniotic fluid and are swallowed by the fetus. We have found, thus swallowed, colon bacilli, streptococci, staphylococci, micrococci and *Bacillus abortus*. Physiologically we think this should not be. Their presence does not necessarily cause disaster. Up to a considerable volume of bacteria the walls of the cesspool, the alimentary epithelium, perhaps aided by the biliary or other secretions and probably favored by the marked desiccation of the meconium in the rectum, holds in leash the bacteria present.

The power of the fetal intestine, like that of the adult, has its limitations. If the volume of bacteria is too great, or the virulence too high, the restraining power of the intestine may break down. Or if the fetus is weakened, owing to a disturbance of its nutrition, its control over resident infection may be lost. Thus when placentitis is present the nutrition of the fetus is crippled and harmful products, due to the infection in the placenta, reach the fetal circulation. The fetus undergoes partial suffocation. It is not strange, therefore, to observe that aborts frequently if not generally suffer from diarrhea prior to the occurrence of abortion. In examining aborts it is common to find meconic pellets in the stomach; that is, prior to death the fetus had defecated and then swallowed its own excrement.

In the later stages of pregnancy, fetal diarrhea is not rare. We have seen many gallons of diarrheic feces in the amniotic sac at the time of the expulsion of the fetus. In other cases there is but a moderate amount of feces in the amniotic sac, the new-born calf being thickly smeared over with soft, sticky, brownish-yellow feces.

The calf which has suffered in utero from dystentery and is expelled completely covered over with excrement is sometimes vigorous. This is an interesting fact carrying with it suggestions regarding the nature and handling of dystentery to which we shall again allude. In some cases calves are born while dysentery is in active progress. We now have such a heifer calf which is growing with exceptional vigor.

Most cases of severe white scours develop within a few hours to a few days after birth, but we can fix no time limit. In our research calves we now and then see an acute dysentery after 10 to 15 days, but these have been generally, if not always, relapses after we had

first brought the dysentery under control and the calf had apparently been well for a number of days. So far as we could observe, these late cases or relapses were etiologically identical with those occurring earlier. Clinically they presented the same symptoms and reacted in the same manner to therapeutic efforts.

There is no clear line of demarcation between white scours and health. One might try to evade the question by resorting to the old step-ladder expedient of recognizing acute, subacute and chronic calf scours. It befuddles both writer and reader. At one extreme is the ideally healthy calf, at the other the calf with fatal dysentery. Neither does there exist a clear line of demarcation, contradictory as it may seem, between white scours and calf pneumonia. Clinically the two glide imperceptibly into each other and etiologically they can not now be differentiated. We desire, therefore, to handle the subject from a broad and liberal conception and to think of white scours as generally described as an intense phase of a very common and destructive infection invading the alimentary tract of fetuses and new-born young.

The etiology of calf scours has not been clearly determined. Numerous writers regard it as a specific contagious or infectious disease having one bacillus as the uniform causative agent to which is frequently added other complicating organisms. This is difficult of proof or disproof. It has already been noted that diarrhea is common in fetuses which are later to be aborted. Most investigators of abortion record only their findings regarding the *Bacillus abortus*. They state generally that they recovered the *B. abortus* from the alimentary tract of the abort, but fail to state whether other bacteria were present or not. According to our investigations the *B. abortus* is not nearly so common as some other bacteria in the utero-chorionic space, the fetal alimentary tract or the alimentary tract of the calf with or without diarrhea.

A bacillus belonging to the colon group is the dominant organism obtained by cultural methods, accompanied by staphylococci, streptococci of viridans group, and micrococci. The dominating appearance of the colon organism may be partly or largely due to its rapid growth in artificial media. So far as ascertained it is identical with the colon organism commonly resident in the non-gravid uterus of the cow. It has not been definitely separated from the colon organism in the digestive tract of adult cattle.

It is commonly asserted, without qualification, that white scours can be regularly caused by inoculation with cultures of the colon

organism. We have tried several times and in different ways and always failed. This seemed to us peculiar, especially since Jensen and others are regularly cited as having clearly proved by experiment the specific character of the bacillus. A critical study of his recorded experiments at least partly explains the apparent contradiction between his researches and ours. The researches of Jensen were faulty in several respects as viewed by our standards. (1) There was no evidence that the gastro-intestinal contents of the calves selected were free from bacteria when born. (2) Details or even a general outline of the feeding is wholly wanting. (3) Most of the controls as well as the inoculated calves had diarrhea, but it was slower in developing in the controls and less frequently fatal, but otherwise showed no differential characteristics.

Having already indicated that we regard dysentery of the new-born as of bacterial origin, we admittedly consider it transmissible. But the basic transmissibility of the infection is one thing and a ready means for the regular transmission of the violent type of the disease is another. The experimenter is also faced, as in abortion, with the impossibility of determining in advance the freedom of the experimental animal from the infection under consideration.

Cultures from the meconium are not wholly reliable. Bacteria in large numbers may exist in the gastro-intestinal canal and cultures made from the meconium remain negative. Recently we have intubed the stomach immediately after birth and in this way have obtained bacterial growths when the meconium gave negative results, but we have not found this plan faultless in determining the exact bacterial state. Cultures are often obtainable from the small intestines, when the rectal meconium is sterile, apparently because the bacteria in the latter have perished. Neither have we been able to rely upon the agglutination of the blood of the new-born calf. Bacteria within the gastro-intestinal tract is not what might in one sense be called infection. It appears rather comparable to the bacterial flora commonly resident upon the body surface. So long as the cutaneous epithelium is intact, infection does not follow, but when the epithelium is divided or destroyed, wound infection occurs. Then follow generally local and systemic reactions against the invader and a contest begins between it and the host. Hence the blood of some new-born calves agglutinates certain bacteria which exist in the uterus of the mother and the gastro-intestinal tract of the fetus, but according to our researches these constitute the exceptions and are due to the existence of an active infection. That is,

the bacteria in the fetal alimentary canal have attacked the digestive mucosa and the bacteria or products of their activity have invaded the tissues and body fluids.

As a rule such invasion has not yet occurred in calves which are vigorous when born, although in highly infected herds the gastro-intestinal tract is almost always heavily laden with bacteria. Soon after birth, even though such calves do not always break down with virulent dysentery or pneumonia, their blood frequently acquires a high agglutinating power to various bacteria. In the typically healthy calf, however, high agglutinating power to these various bacteria does not become established, so far as we know. In other words, bacteria within the gastro-intestinal tract (and perhaps also in the genital tract) may lead an uneventful existence without producing any recognizable traces of any effect upon the animal body, just as bacteria of many genera may and do exist upon the skin without peril until some injury to the epithelium occurs. Like bacteria upon the skin, those within the gastro-intestinal and genital cavities are technically outside the body and acquire importance only when they invade the tissues.

When we add to these obstacles the utter impossibility of clearly defining white scours, the difficulty of securing definite experimental data upon its etiology is apparent. Our virtual failure to experimentally cause typical and violent dysentery neither disproves nor tends to disprove its infectious character. Bacteria are present in abundance in dysentery, and when it is fatal they penetrate the alimentary mucosa and invade the various internal organs. The conclusion can not be avoided that, since in most cases of calf dysentery there is an abundance of bacteria present and that the organisms recognized are reasonably uniform in the different patients, the disease is due to infection and that the bacteria multiplying disastrously in the alimentary tract of one calf would likewise multiply, though not necessarily disastrously, when properly placed in the digestive tract of another calf. Clinically this is apparently true. White scours breaks out in a large stable and pursues the relentless course of a scourge, causing a mortality of 10 to 100 per cent for months together. It then impresses the observer as a highly infectious malady.

Therapeutic evidence also apparently indicates its infectious character, though this may be misleading. When a horse is rendered highly resistant to the dominant colon organism associated with white scours by means of repeated inoculations, his blood serum

injected into a calf with white scours generally acts specifically to ameliorate the disease. We have found no record, however, of any control experiments to show that the blood serum from a horse not immunized or fortified by means of artificial inoculation with the colon organism would not have a like effect. A more direct test perhaps is the use of killed cultures of artificially grown bacteria in the disease of calves. Limited observations seem to indicate that these act specifically under conditions not yet fully determined and give to the calf a more enduring resistance to diarrhea than the serum.

As already intimated, white or calf scours is not clearly defined and hence its symptoms can not be accurately described. There is no epoch during which the line of demarcation between health and disease is so dim and hazy as in young calves. The average calf has, when born, a glossy, brilliant coat of hair, soft and velvety to the touch; its body is of even contour and plump, and when vigorous it is up and playing in an hour or two. Its intestines, especially the rectum, contain a pound or more of rather hard yellowish or greenish to greenish-black meconium consisting of biliary salts, exfoliated débris, hairs and generally a swarm of bacteria. The size of the meconial pellets, their adhesion to each other and their degree of desiccation vary greatly and sometimes suggest that their character is largely dependent upon the quantity and nature of infection present. Dysentery may exist at birth or may develop at any hour post-natal. When a cow or heifer has very severe infection in her uterus the fetus when born is often exceedingly dull and languid. It is unable to get up or to stand when helped to its feet. Perhaps no diarrhea is present. It may, in fact, die of what appears as extreme sepsis and an autopsy shows the general lesions observed in aborts, such as sub-peritoneal or sub-pleural hemorrhages of the viscera suggestive of septicemia, apparently the calf septicemia of numerous writers. If death is held in abeyance the calf generally develops violent dysentery.

Other calves are born apparently well and proceed to break down with diarrhea in a few hours up to eight, ten or more days, but the later in life the attack the less stormy its course. When violent dysentery is impending the first indication of the coming storm is a sudden rise in temperature. At this epoch the calf is not notably ill, the feces are not thin and there is no marked loss of appetite. But this, in severe cases, is not for long. Soon in many cases there are streaks of blood in the feces if any chance to be voided. In

one to a few hours later the storm breaks and the observer frequently sees one of the most virulent and rapidly fatal diseases in animals, frequently destroying life in 10 or 12 hours. When the dysentery sets in the temperature vacillates. Often the anus is paretic and the rectum is open and flaccid so that the thermometer reveals little of the actual temperature of the body.

The feces offer the widest possible variation in character. In the fetus the diarrheic feces are usually yellowish, greenish-black or black. In post-natal dysentery the fecal discharges are much the same as in the intra-uterine diarrhea if the storm breaks before the calf has taken milk, and until the milk or its derivatives have passed through the digestive tract to modify the excrement.

After milk has been taken the character of the excrement is necessarily altered. The milk-filled stomach serves as a large flask filled with an excellent medium (milk) for the multiplication of the bacteria present, while the body heat provides ideal incubating warmth. The milk undergoes rapid bacterial decomposition and is hurried along the alimentary tract with great rapidity. The feces may contain some small decomposing milk particles still retaining some of its white color, but it has mostly disappeared. The bacteria cause the liberal formation of highly fetid gases, and these, mixed in small bubbles in the thin feces, may lend to them a whitish color. But the color varies greatly. Sometimes it is greenish, often brownish or yellow. In very severe cases the discharges are extremely thin and watery, mixed with minute particles of débris giving it a dirty brown color, and charged with bubbles of highly fetid gas which escape quickly.

One of us (Carpenter) believes that the color of the feces is largely determined by the bile. In calves dying from dysentery he finds that the gall bladder contains 50 to 200 c.c. of bile, while that of a healthy veal calf ordinarily contains from 5 to 20 c.c. The failure of the bile to be discharged perhaps plays a highly important part in both the color of the excrement and the violence of the disease.

In large stables where numerous calves are suffering from the disease in various stages the odor from the calves is highly repulsive, of a sweetish sickening character.

The general appearance of the calf changes rapidly. The watery feces are forcibly expelled for a time, but later escape involuntarily through the paretic anal sphincter. The calf loses weight and volume with enormous rapidity. It takes no food or water, while

the water of the tissues is being rapidly withdrawn to constitute the chief volume of the diarrheic discharges. The calf becomes unable to rise, lies flat on its side with its head drawn back (opisthotonus), becomes unconscious and dies.

Short of this violent type there is every gradation, and in cases of great virulence the dysentery may at any time abate and the calf rally and without definite therapeutic handling undergo more or less marked improvement and may eventually recover.

Regardless of the grade of alimentary disturbance there is a tendency toward the development of pneumonia. Sometimes the pneumonia develops suddenly and violently with all the clinical symptoms of that affection. Other cases creep on insidiously with a hacking cough associated with the digestive disturbances. The pulmonary difficulty tends to aggravate the digestive trouble by lowering still more the resisting power of the animal. In many cases the only clinical evidence of pulmonary disease is an occasional hacking cough.

The clinical evidences of pneumonia may appear at any time from a few days after birth up to 90 to 100 days old. Like the dysentery, it is more prone to pursue a stormy course when it develops early. Dysentery and pneumonia each serve to conceal and intensify the other. The high temperature of dysentery causes rapid breathing, and the dyspnea of pneumonia tends to detract attention from any dysentery present.

Arthritis is not rare, and, like the pneumonia, may be violent or may be of so low a degree as to be difficult of clinical recognition. The onset of arthritis may be extremely sudden. The calf is up and about feeding and looking well. An hour later it is so lame in one limb that it refuses to bear any weight upon the affected member. The involved joint is greatly swollen, tense, hot, and extremely painful to touch. A little later some other joint may be equally involved and, two or more limbs becoming affected, the calf is unwilling or unable to stand. In other instances the affected joints are neither greatly swollen nor very painful. Several or all limbs may be involved, causing the calf to walk slowly and cautiously without marked lameness in any one limb. As in pneumonia, so in arthritis, lesions are found upon autopsy which had not been clinically recognizable.

Other evidences of disease appear not readily assignable to a proper place in the course of the basic infection. Amongst the most common of these are ulcers and abscesses about the mouth,

nose, and especially the cheeks. These aggravate exceedingly the clinical course of the malady. The lesions are probably due to a secondary invasion for which the basic infection has prepared a vulnerable field. Rachitic enlargements of the bones are not very rare, but their relation, if any, to the basic infection is unknown.

Pyemic abscesses may rarely occur in any organ or tissue in the body and have the same significance as the arthritis. Occasionally a pyemic abscess occurs in the spinal canal with final complete paralysis of the posterior body.

The postmortem findings vary with the form and duration of the disease. In calves succumbing to violent dysentery the lesions are those of gastro-enteritis and septicemia. Hemorrhages occur in the capsule of the spleen or the outer and inner walls of the heart and elsewhere. The fourth stomach shows great reddening (congestion) of its mucosa and the folds are generally edematous. The duodenum shows similar lesions. The remainder of the alimentary tract is not so markedly altered as a rule, although the tops of the folds of the rectum are frequently highly congested and sometimes hemorrhagic. When the immediate cause of death has been pneumonia, the principal lesions are, of course, found in the lungs. In most cases the anterior lobes alone are affected, but in some cases even the diaphragmatic lobe is largely solidified. The pneumonic area is rather whitish or grayish white, is mottled and has a feel much like that of normal pancreas. There is seldom any pleuritis. When viewed under the microscope the affected area is seen to be filled with enormous numbers of polymorphonuclear leucocytes. It is these which give to the diseased lung its grayish, mottled appearance. The condition is a severe purulent broncho-pneumonia. The synovial membranes of the chief joints like the femoro-tibial, the tarsal and carpal may be inflamed. The pyemic abscesses when encountered have as a rule soft atonic walls. The predominant organism encountered is of the colon group and offers nothing remarkable in cultures or staining.

The calves which do not succumb to the gastro-enteric, pulmonary or other lesions finally recover a physiologic appearance at 120 to 180 days old, when they shift more or less completely from a milk to a vegetable diet. The pot-belly or gauntness slowly abates, the feces cease to adhere to the tail and buttocks, the harsh, dry coat regains its luster, the masses of epidermal débris in the hair disappear, the animal becomes vigorous and grows rapidly. It then enters upon a period of unusual good health which extends to

puberty. The only trace of the adversity through which it has passed is the matting and staining of the vulvar and preputial tufts and the persistence of more or less numerous nodular elevations in the vulvar and preputial mucosæ, known as the granular venereal disease. The significance of neither the matting of the hairs nor the lesions in the mucosæ is accurately known. We do not believe that during this epoch of apparently unusually good health the animal body is free from the presence of the bacteria which formerly imperiled its health and life, but instead, that such bacteria continue to exist in such places and manner that they produce no clinical evidence of their presence. As stated above, we believe they may exist in considerable numbers in the intestinal or genital tract, in the udder or elsewhere, where for the time being they may lead a virtually saprophytic life. During this time they cause no agglutinating reactions in the blood of the animal. In our researches with the *Bacillus abortus* some young animals appeared, by the agglutination test, to be wholly free, but when they reached breeding age and copulation occurred there was a sudden and marked acceleration in the agglutinating power of the blood of both bull and heifer.

The senior author in his contribution to the report of the Abortion Committee for this meeting has discussed the question of the influence of these infections in the calf upon its fertility as an adult. He believes this the most important consideration in connection with the health of the calf.

The handling of white scours has been entirely too empirical. The breeder has studied the problem but little. He sometimes attributes it to bad feeding and fails to feed well, or he attributes it to infection but fails to disinfect, and finally becomes bewildered and discouraged and possibly attributes it to an act of Providence and abandons the fight.

Some veterinarians find no solid foundation upon which to stand. If they turn to veterinary literature they find a brief jumble of conflicting opinions not seasoned with the presence of facts. They follow one recommendation and it fails, another and the results are disastrous, and after a series of conflicts and doubts settle down to the belief that dysentery in calves is an enigma not subject to scientific control.

Another group of practitioners desert veterinary science as a science and become the devoted protégés of pharmacists, or biopharmacists. Under the direction of these they give this or that

dose repeated at prescribed intervals. If disaster follows, the veterinarian, not the pharmacist, bears the blame. The advertising pages and not infrequently the reading columns of veterinary journals contain brief descriptions, by pharmacists, of white or calf scours, its etiology, and a sure cure, which the establishment has to sell. The practicing veterinarian is being constantly besieged by the energetic propaganda of these pharmacists or biopharmacists with advertisements, circulars and alleged journals, handbooks, etc., etc., recommending their wares and indicating how they should be used. Finally the veterinarian, if he has ever seen any scientific literature upon the subject, forgets it and sees only the endless stream of propaganda in favor of cures. He then succumbs and becomes a puppet in the hands of the pharmacist; when the pharmacist pulls the string the veterinarian jumps. The pharmacist places on the label of the bottle the dose, when and how to give it. The pharmacist makes the diagnosis and prognosis and dictates the method of handling. The veterinarian makes the autopsy and bears the responsibility. It would be difficult to place accurately the blame for this state of affairs, but much of it is due to neglect upon the part of investigators to give to this subject a fair proportion of the attention it richly deserves.

According to our researches the handling of dysentery or calf scours should be based upon certain well-established facts:

1. White scours or calf scours is fundamentally an intra-uterine infection of the fetus, and the first stage in the prevention is to have the uterus and cervical canal of the mother as free from infection as practicable at the time of conception. This involves the scientific handling of the infections of the genital organs prior to breeding. The subject is too large to attempt its discussion here.

2. Post-natal infection readily occurs in a variety of ways.

a. The cow often has the metritis of pregnancy due to or associated with the infection responsible for calf scours. There is an inevitable discharge of such infection from her genital tract which flows down along the tail or thighs and contaminates the exterior of the teats. From this the calf may take the infection in sucking, or the milker may get it into the milk and feed it to the calf. Or the infection contaminating the exterior of the teat may gain the interior of the mammary gland, multiply there and directly contaminate the milk. For these reasons we have urged, at least in badly infected herds, that calves be not allowed to suck their mothers (or other cows), and that milk be not drawn from the

udder to feed calves without first having washed and disinfected the udder in order to avoid the ingestion of the infection from the exterior of the teats.

b. Post-natal infection occurs by the feeding of sound calves from vessels without sterilization previously used for feeding diseased calves. The evident prevention lies in feeding calves from sterile vessels only.

c. Calves diseased with white scours or pneumonia, or calves suffering from milder infection of the digestive tract due to the same organisms, may transmit the infection to sound calves by contact. Diarrheic feces and infected feces from calves not suffering from dysentery contaminate the bedding, hay, grain, stalls and fixtures. Sound calves swallowing the contaminated food or bedding or licking the sides of the stalls or their fixtures obtain the infection.

When several calves are kept together diarrheic feces become plastered upon the skin and hair of the calves, they habitually suck and lick each other and thus take the infection. We believe it of fundamental and immense importance that the new-born calf be given a clean, isolated stall until it is known to be sound and then permitted to come in contact only with calves known to be sound. The fashionable calf stall of today, built for accommodating two or more calves and having lattice or other open-work partitions so that all calves are essentially in contact, with perfect freedom for the passage of infection from each stall into the adjoining one, is a crime against sanitary principles. The partitions between calf stalls should be solid and the calves should be kept isolated until at least 2 to 3 months old.

3. In all those herds where intra-uterine infection is causing much sterility, abortion, metritis or retained afterbirth, it is virtually certain that each calf born carries within its gastro-intestinal tract at birth a large volume of highly virulent infection essentially identical with that in the uterine cavity of its mother. As a rule it may be hopefully believed that at birth the infection in the gastro-intestinal tract has not yet invaded the tissues but is being held in restraint as in a cesspool. The problem confronting the veterinarian is primarily to largely get the infection out of the digestive tract or to control it effectively within the tract before it has multiplied in volume and intensity and acquired explosive force.

a. Milk offers an ideal medium in which bacteria may grow. The digestive tract contains the bacteria ready to grow in the milk. The body temperature with a considerable exclusion of oxygen and

other conditions favor rapid bacterial growth. Other calf foods equally digestible afford like facilities for bacterial activity. The calf should not, therefore, have milk for a considerable period. We advise, and are experimentally applying the rule, that the first feed of milk shall not be given the calf until it is at least 24 hours old.

b. In the meantime we advise that the gastro-intestinal tract be promptly unloaded of its meconium. For this purpose we have used enemas of warm physiologic salt solution twice daily for several days. The enema is administered by means of a rubber horse catheter attached to a hospital irrigator of 3 to 4 quarts capacity. The catheter is carefully inserted for a distance of 12 to 20 inches. We have not tested other plans.

c. The calf having acquired no experience in resisting invasion by bacteria, we aim to advance temporarily its powers of resistance by liberal doses of calf-scours serum, varying in dosage from 10 to 30 mils twice daily for at least two days. For this purpose we have used a serum purchased upon the market from a reliable establishment.

d. When the calf has reached 24 hours of age or not long thereafter we feed a small ration of milk. At present we are working upon the basis of a ration of whole milk equal to 2 per cent of its body weight, given twice daily. After 4 or 5 days if the calf is well the milk ration is to be gradually advanced until at 10 to 15 days of age the calf may be fed practically all it will eat.

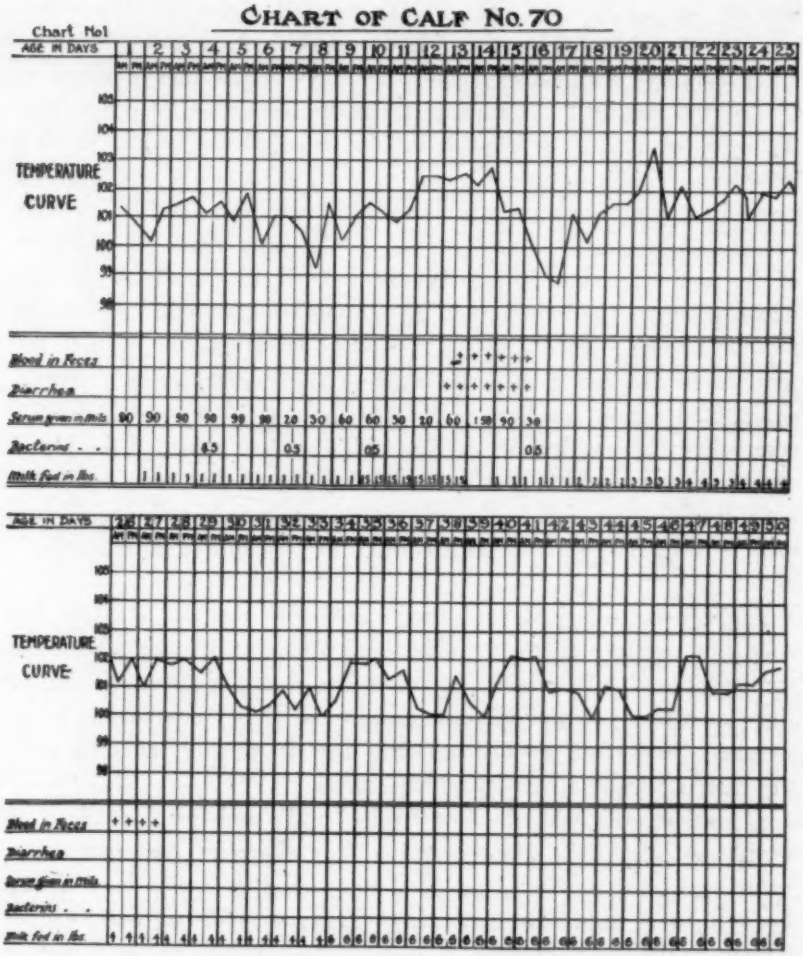
The source from which the milk had best come has received considerable thought. For a time the senior author believed it safer to take the milk from a sound cow, one free from metritis or retained afterbirth, rather than from the calf's own mother in case she was so diseased. Researches have rendered a change of position prudent. It now appears that while a calf carries in its digestive tract many bacteria, these have not caused the formation of antibodies in the fetus. Although the utero-chorionic space contained the same infection, and the blood of the mother according to agglutination tests contained ample antibodies toward such infection, the antibodies fail to pass the placental filter and reach the fetus. Our researches have shown that the blood of a new-born calf generally does not react like that of its mother but fails to agglutinate *Bacillus abortus*, colon bacilli, streptococci, etc., obtained from both the uterine cavity of the mother and the alimentary canal of the fetus. (Some investigators have reported otherwise. They have stated that the agglutinating power of dam and progeny are parallel, but they fail

to state the age of the calf. In our researches the calf blood has been almost without exception without agglutinating power at birth, but it acquires such power in 8 to 20 days and is then parallel to that of the mother.) It appears from the researches of others that the milk of a cow bearing infection contains antibodies to that infection. This is apparently borne out by clinical observations and possibly explains the age-old belief that the best food (with rare exceptions) for a new-born animal is the milk from the mammæ of its mother. That is possibly because if the new-born animal harbors dangerous infection in its alimentary canal the milk of its mother contains antibodies against that infection, or, to put the thought in different words, the milk of the dam contains properly constituted serum for her calf. This thought is supported by the researches of Forssel of Stockholm in his successful use of the blood serum of the mare in the cure of arthritis in her own foal. It accordingly seems that in the present state of our knowledge, if raw milk is to be fed to a new-born animal, its best source is its mother's udder.

The breeder of pedigreed cattle naturally desires to grow his calves promptly and well, and tends to object to the ration we have thus proposed. Inevitably calves under this plan lose weight so long as held upon the minimum ration of 2 per cent of its body weight. But in our experiments this loss is quickly regained once the calf is properly started on its course.

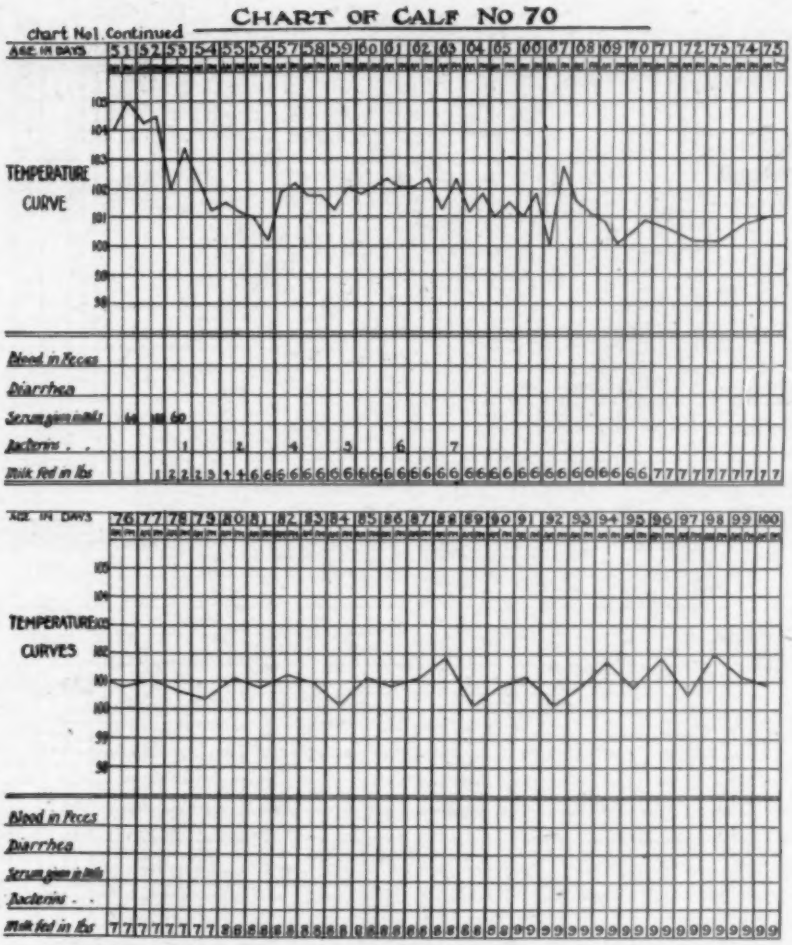
Simultaneously with the first feed of milk and the third dose of serum we advise the administration of calf-scours bacterins, commencing with a dose of 1 mil and increasing by 1 mil once a day until 10 to 12 mils have been given. The bacterins we believe give a more prolonged resistance to the bacteria harbored in the digestive tube. Once such resistance is obtained, it remains efficient until a natural resistance is built up. The bacterins used in our experiments were made by us in the college laboratory. We have not tested commercial bacterins.

An important element entering into the question of preventing or curing calf scours is that of pasteurized and boiled milk. It is of special significance in herds where tuberculosis exists. Many writers assert that boiled milk will cause scours in a healthy calf. Our researches deny that explicitly. Instead, we would say that a calf bearing an important infection in its digestive tract will break down with dysentery if fed at first on boiled milk; but if the digestive tract of the calf is essentially or wholly sterile, boiled milk is

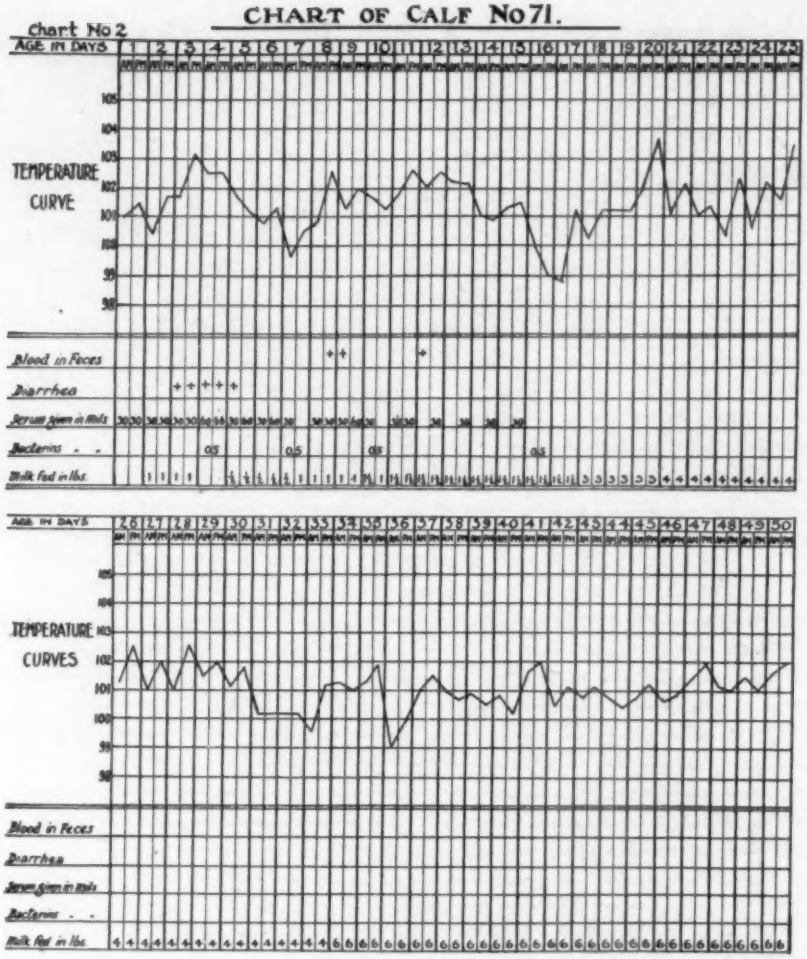


readily borne. In practice there is no safe method for deciding in advance that the calf is free from infection, hence it is perilous to give boiled milk unless certain precautions are taken. Associated with the belief that boiled milk causes dysentery is an age-old belief that the colostrum is essential to the calf. We habitually ignore this teaching with impunity.

There is a controversy, too, over the comparative merits of pasteurizing and boiling. We have not tested pasteurized milk, but in our observations in herds where pasteurized milk is given, we have been wholly unable to see the advantage of pasteurization over boiling. The boiling has the tremendous superiority of affording a large margin for error. If the person who pasteurizes milk



errs in the temperature, it is not sterilized and tubercle and other bacilli escape death, while if the boiling falls somewhat short of the technical 212° F. there still remains a margin of safety in sterilization, especially with the most unfavorably known bacteria of milk. In a recent experiment we have gone farther and fed two calves from the start upon milk autoclaved at 15 pounds steam pressure for a period of 30 minutes, which heated the milk to 240° F., or 28 degrees above boiling, so that the milk was a brownish color like coffee. The calves did phenomenally well. These calves bore aboundant alimentary infection at birth, and our ability to grow them on autoclaved milk is attributed by us to the luxurious



use of serum and bacterins until a fair degree of resistance had become established.

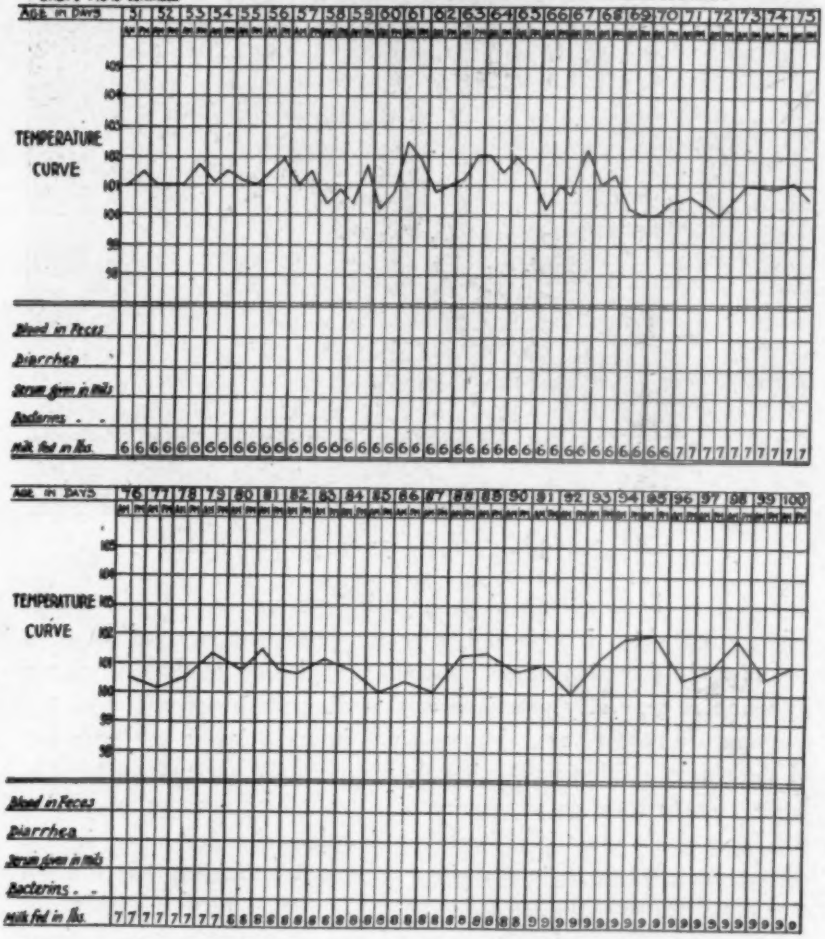
When a calf breaks down with scours or pneumonia, we repeat with some emphasis the plan already related for prevention:

1. We immediately withdraw all food.
2. High enemas of physiologic salt solution are given.
3. Large doses of serum are administered, and as soon as the dysentery is checked bacterins are given freely.

The dosage of serum or the frequency of its repetition are not gauged by the label on the bottle. Our purpose is to control the dysentery, and we gauge our dose by that. We give rarely less than 30 mils at a dose and occasionally 50 to 60 mils. One of the two

CHART OF CALF No 71.

Chart No 2 continued



calves grown on autoclaved milk had 190 mils in one day, and we gave no more simply because no more was required. It is utterly harmless so far as we have yet carried the dosage. We repeat the dose in 2 to 4 or more hours, according to indications, and aim to break the attack promptly and completely in the shortest possible time. We believe this economic. In the case where we gave 190 mils in a day the life of the calf might have been saved with 150 mils, but probably the dysentery would have continued the next day and required another 150 mils to control it, or one-half more serum than by giving the 190 mils at first. After the virulence of the

FIG. 1.—*Calf No. 70 at 88 days*

infection is thoroughly broken the calf is again started on a small milk ration which is advanced as promptly as may seem safe.

The early detection of an impending explosion of the alimentary infection is generally practicable. In all cases observed by us the temperature rose several degrees some hours prior to the breaking of the storm, so that measuring the temperature every 4 to 8 hours has served to warn us of approaching trouble. In many cases also the feces show clots of blood before other changes occur in the excrement. When these warnings appear the prudent veterinarian and breeder promptly act as suggested in the preceding paragraph. Food is withdrawn, heavy doses of serum given, and enemas of physiologic salt solution administered.

We are by no means content when we have prevented or checked a dysenteric or pulmonary storm. We would instead strive toward a far higher ideal. We would avoid the sticky feces which adhere to the tail and buttocks, the pot-belly, the rough, staring coat, the capricious appetite and the tell-tale staining and matting of the hairs constituting the preputial and vulvar tufts or brushes. Experimentally this ideal is quite uniformly available. While the ideal may not be within the grasp of the practical breeder at present, pressure toward that ideal is desirable and the goal is not far beyond his reach.

FIG. 2.—*Calf No. 71 at 88 days*

Overfeeding should be scrupulously avoided, and the definition of overfeeding should be clear. When the intestinal canal is in such a state of infection that the feces are pasty and stick to the hairs of the tail and buttocks, the calf is getting more food than it is digesting, and while it may be starving to death, it is in a sense being overfed. The right amount of food for a calf is what it can digest and assimilate, or somewhat below that point. When a storm of diarrhea breaks, one-half a liter or 1 mil of milk is too much. When a calf is actually sound, no amount of milk, as a rule, is too much if it will take it. The amount of milk to be allowed a calf is like the amount of serum to be given—it all depends upon the calf.

When a calf has had its mother's milk raw for 5 to 10 days with the administration of such serum and bacterins as have been indicated, the calf acquires a resistance to the alimentary and pulmonary infections present which will carry it through any ordinary strain from the feeding of pasteurized or boiled milk.

We then favor, in hand-fed calves, boiled milk. Whether whole or separated and mixed as it may be from the herd, it is safe, and according to our researches the calf is more vigorous when so fed. If desired, as shown by our experiments, the calf may be fed boiled and even autoclaved milk with safety and with ideal results, but the first few days require constant watch with a very free use of serum and bacterins.

FIG. 3.—*Calf No. 71 at 95 days, showing clean preputial tuft.*

When there is a chronic indigestion in calves several weeks old, with pasty feces and frequently with cough, much improvement can be made in many—perhaps most—cases with the liberal use of bacterins and a careful regulation of the diet. There is not, however, the same satisfaction in handling these old-standing cases as when one is permitted to control the infections before there develops the chronic cachexy with lowered vitality and abundant infection.

The various subordinate or less frequent phases of this infection should receive due attention. The arthritis usually yields to the serum and bacterins provided it has not gone on to extensive abscessation. In the latter case, in conjunction with the serum it may be necessary to open the abscesses freely and disinfect their cavities.

The ulcers and abscesses occurring about the lips, cheeks and face should be given careful attention. The abscesses should be promptly and freely opened and their cavities well disinfected, or, if need be, caustics or escharotics like sulphate of copper freely used.

Many calves when severely infected acquire a badly depraved appetite and habitually eat bedding, rubbish, their own feces and almost anything within reach which is not fit to eat. This should be promptly stopped by the constant use of a good muzzle.

The ideal toward which we are striving is well illustrated by the two calves we have recently fed upon autoclaved milk. Calf No. 70 (fig. 1) is the calf of a scrub heifer, without history, purchased in

advanced pregnancy. The birth was slow, the uterus being atonic. The calf was possibly premature. It weighed 49 pounds, was exceedingly poor and exceedingly weak and dull. It could not stand when helped to its feet at 2 hours old. During the first 10 days she lost 7 pounds in weight. She then began to gain and at 30 days weighed 68 pounds, a gain over weight at birth of 19 pounds, equal to 0.63 pound per day, and at 88 days 145 pounds, a gain of 96 pounds, or 1.95 per cent of body weight per day. That is, a calf weighing 100 pounds at birth would have gained 1.95 pounds per day in order to have equaled the daily gain of this calf. At 135 days she weighed 210 pounds, or 4.3 times as much as at birth. It will be seen by the illustration that she was very fat with soft, furry coat, without pot-belly and in all general respects an ideally developed calf.

She received 1,340 mils of calf-scours serum and 27 mils of bacterins. Chart No. 1 shows that she broke down with dysentery on the thirteenth day. It was controlled, recurred on the twenty-seventh day, and high fever occurred on the fifty-first day. Then followed heavy dosage with bacterins, after which she shows an unusually even temperature tracing.

Calf No. 71 (figs. 2 and 3) was born within an hour of the birth of No. 70, his dam being a scrub heifer purchased with the dam of No. 70. No. 71 weighed 59 pounds at birth. The birth was very prompt and the calf was strong and vigorous. He broke down with moderate diarrhea at 4, 8 and 12 days, and showed high temperatures on the twentieth and twenty-fifth days. He then settled down to a very regular temperature line and so remained until he was slaughtered for veal. He weighed at 88 days 175 pounds, being a gain of 116 pounds, or 1.3 pounds per day, or 2.24 per cent per day in body weight. Fig. 2 shows that he was perfectly developed. The photograph is misleading as to the condition of his preputial tuft. He was so full of play when led out that he constantly dribbled urine. After much work he was finally caught by the camera with the tuft dry and, as shown in fig. 3, clean. When slaughtered for veal his carcass was very fat and the veal of prime quality. He had 840 mils of serum and 2 mils of bacterins. The charts (No. 2) show graphically the elevation of the temperature followed closely by blood in the feces and diarrhea with the prompt fall of the temperature and cessation of dysentery after heavy doses of serum.

The control of dysentery in calves is one of the most many-sided and interesting of problems. It is of great economic interest to

breeders of cattle and of interest to the State and the Nation in the conservation and increase of animal food. It is of interest to the veterinary practioner as offering a field for usefulness which commands for success scrupulous attention to details and a generous conception of the basic cause and of all the cross currents which surge about the young animal to modify the volume and virulence of pathogenic micro-organisms.

To the research worker it offers a boundless field for careful study. The senior author feels sure the infection in the calf has a profound and lasting influence upon its fertility when it has reached adult life. There is perhaps an even broader field just beyond our present horizon. The problem of sanitary milk for man and especially for children lies close beside that of calf dysentery. We know that the problem of feeding young children is far from solved. When the control of diseases in calves has reached high efficiency it may throw valuable light upon the proper use of milk by man.

One of the difficulties in the path of progress in this field is the economic problem of serum and bacterins. The price of serum has, comparatively, shown a downward trend. Possibly by a wider use its manufacture can be cheapened. There are other possibilities. The work of Forssell suggests possibilities with the serum of the calf's mother, but there are difficulties to be overcome. The prices at which bacterins are sold by some houses are excessive. Their cost being purely nominal and their manufacture quite simple, State veterinary sanitary boards and veterinary departments of State colleges and experiment stations should be able to provide ample material at a nominal expense.

Dr. L. V. Polk, who has been an employe of the B. A. I. for the past 10 years and since 1913 assigned to tick eradication work in Mississippi, where he was Assistant Inspector in Charge, has recently resigned from the Bureau service to accept a position with the Dairy League of New York State. Dr. Polk is a man of considerable ability and educational qualifications and the New York people are to be congratulated upon securing his services.

Governor R. G. Pleasant, of Louisiana, has commissioned Dr. W. H. Dalrymple a member of the Council of Defense of that State to succeed Prof. W. R. Dodson, former Dean of the College of Agriculture, and Director of the Agricultural Experiment Stations, Louisiana State University.

STRONGYLIDOSIS IN HORSES AND MULES[1]

By P. J. ORCHARD, *Baton Rouge, La.*

IN reading the veterinary publications during the last few years you will have noticed that an ever increasing space was devoted to various parasitic diseases, which seems to indicate that they were heretofore more or less underestimated in their importance. Especially here in the South the time will approach when we shall have to give a second thought to the farmer's iron-clad diagnosis: "My mule has the bots."

Although we have smilingly shelved the bots together with lampers and the "lost cud," we have learned that our stock is boarding parasites, which causes losses equal to those from anthrax and Texas fever. We know that you cannot raise sheep unless you keep the vermin out of the stomach; we see calves get raggy and perish from diarrhea caused by stomach worms; we are called to inoculate sick pigs and find a worm pill more efficient than the serum.

Somewhat new, however, is the observation that parasites, harbored by horses and mules, can produce pathological conditions which prove just as fatal to these animals as the worms that kill our puppies. This claim of mine, gentlemen, may appear rather radical to many of you; the facts on which I base them I shall try to show to you in this paper. Before doing so, however, I want to point out that a practitioner is talking to you. I am not in a position to give you the life cycle of these parasites involved in all its minute details. I may fail in logically explaining my observations in every detail. I will not even attempt that. I simply want to give you these findings, because I feel convinced that they will form a foundation on which theory and research can build.

I contend that strongylidosis is responsible for two diseases prevalent in our Southern territory with its peculiar climatic conditions: (1) For a sickness for which I find no better name than "wasting disease." (2) For the colic in 90 per cent of the cases.

I will try to give you the symptoms and the causes and the treatment. As to the latter, our endeavor has been so far crowned by success.

SYMPTOMS

In letters and inquiries, in conversation and telephone calls, we get a history such as this: "I do not know what is the matter with

[1] Paper presented at the fifty-sixth annual meeting of the American Veterinary Medical Association, New Orleans, La., November, 1919.

my mules. They eat, they drink all they want, have the best corn, hay and grass, and it looks to me that the more they eat the poorer they get."

Or at other times we see mules with typical symptoms of malnutrition, with long hair, poor, sluggish, dull expression on countenance, with temperature and pulse normal, the visible mucous membrane in most instances showing a yellowish or brownish red discoloration; in the aggravated cases the membrana nictitans is dotted with petechial spots and shows other symptoms of grave indigestion.

Quite contrary to our expectations, the animals display a ferocious appetite and in spite of being allowed an excess of feed they continue to lose flesh. A hostler draws our attention to a peculiar habit that with feed in the box they gnaw the manger, eat the post and fences, eat trash, and prefer to pick over the manure pile to the best pea-vine hay offered.

The action of the bowels generally appears to be normal, although not seldom intermittent diarrhea alternating with occasional constipation is encountered.

The whole sickness bears the symptoms of a chronic trouble. Emaciation continues until finally a stage is reached where the animal's vitality sinks below normal, frequently together with his temperature. The pulse becomes weak and wiry, and the affection of the circulatory system expresses itself in the appearance of edema. It is obvious that little work is required to do the rest.

There is one form where the decrease of vitality seems to proceed to complete emaciation. The patients are introduced with a diagnosis of kidney troubles; the symptoms are extreme weakness in back and loins, occasionally accompanied by discoloration of the urine. Otherwise the animal is in fair condition.

In extreme contrast to this wasting disease are the violent symptoms of the "worm colic" so excellently described by Hutyra and Marek. You are familiar with the two forms they picture so well. You know the mild case that makes your client such a firm believer in his patent colic medicine. Out in the field our mule becomes restless, "squats," and within a minute shows fierce abnominal pains, is unhitched at once, taken to the lot, wallows for 15 or 20 minutes, and after half an hour or two hours may resume work without any bad after-effects.

The violent worm colic is the one that makes us take off our coats and get busy. We then appreciate the fact that chloral hydrate will quiet the patient in a disease the cause of which we are unable to

remove. This form of worm colic is easily recognized by its long duration and the frequent failure of medication. In the start the symptoms are not so alarming; peristalsis is noticeable; to a certain extent there is a slight bloating that does not seem to necessitate the use of a trocar. Even feces may be discharged in the beginning; but soon the outlook darkens; the peristalsis is reduced to an intermittent metallic vibration, or we have indications of gastric flatulence without visible affections of the large intestines, whereby no swelling or tension in the flank occurs. Later on the sensorium becomes disturbed, and the end of the struggle is marked internally by the sinking temperature, externally by icy cold ears and nose, cold sweat, and forcible unconscious movements which I have heard one of the oldest Southern practitioners so fittingly call "the death march."

CAUSES

It was not so many years ago when my client and I felt entirely satisfied that the horse with the described "wasting disease" died with the "swamp fever," and that the mule that we have been treating for 24 hours just naturally died of the colic. But when in the summer of 1917 on one plantation with a herd of 40 mules 12 died in a period of 3 weeks from that "natural" colic, and 5 wasted away, the death rate became both appalling and embarrassing. So we started a postmortem campaign which up to date embraces 160 to 170 autopsies. Out of the findings of these autopsies we concluded that the causes for the "wasting disease" and certain epizootic colic outbreaks were an infestation with parasites in numbers heretofore greatly underestimated. An examination of the professional works on the subject convinced us that they were to be identified with the group of palisade worms more commonly called strongyli.

As the difference between "wasting disease" and colic is a rather striking one, so we believe that different strongyli are strictly responsible for them. We claim that the "wasting disease" is produced by the intestinal strongyli found in enormous numbers in the cecum and large colon, and maybe partly by the form of strongyli found in the abdominal cavity and mesentery in clusters.

Our postmortems made us suspect that the strongylus found in the renal hilum is justly accused of causing the so-called "kidney trouble" in the South. While the parasites found in the intestines and abdominal cavity carry on a passive parasitism, if I may phrase it that way, the examination of the organs of circulation has taught us that the active parasitism of the strongyli found in the blood

system is by far the most dangerous. I am speaking of the aneurisms of the mesenteric vessels. The presence of these pathological conditions always has been a common observation, but the fact that they are more frequent and, in my opinion, of the utmost importance in the South cannot be strongly enough emphasized.

Since we have opened so many colic fatalities we have found in every one of them from one to six dilations of the mesenteric artery which were filled with a blood clot and swamped with strongyli. We became confident that here was the seat of our colic. I will not deny that one aneurism in a minor vessel can remain undisturbed without impairing the health of the animal, but if I try to relieve a case of colic for 12 hours without the slightest success and then find in autopsies several enormous aneurisms, one of them blocking four of the most important arteries of the intestinal tract, then I do blame the worm infestation for the death of the animal. This picture of conditions found in the mule above referred to may prove to you what words might fail to accomplish.

Where blood circulation is blocked to an extent as was the case with this mule it is obvious that no drug could move the bowel that is entirely paralyzed, not to say dead, through lack of nutrition. A dose of eserine or arecoline has in such a case taught us carefulness in its use, as it kills a worm colic in very short order.

While we admit that a sheep with stomach worms will soon infect the rest of the flock, the assertion that a wormy mule can cause an epizootic of wasting disease or colic may seem to some of our Northern colleagues rather far-fetched. The practitioner familiar with the Louisiana sugar plantation knows that conditions here promote the spread of the disease in every possible way. We do not know the individual stall; the manure pile is in the mule lot; the hay is fed in a long rack; waste mixes with manure on the ground, and heavy rains and hot weather cause conditions favorable for dissemination. The common pasture in the low-lying lands, the bad drainage, the contaminated water, assure continuous reinfestation.

TREATMENT

You might be interested to hear how we attempt to control the disease. Intentionally I use the word "control," as the above mentioned local conditions make the eradication virtually impossible. In that point I radically differ from some of the authors of recently published articles on anthelmintics. Our aim is not to get the last

strongylus out of a mule's bowel, because with the next bite he gets after his worm treatment he will get another worm.

Furthermore, a radical worm treatment is not feasible for two reasons: First, many of the diseased mules would answer with death the starving and purging method. Second, as practically every animal is affected, only a general treatment can accomplish results; and if carried out with the radical method no owner would consent. Opposite to the radical method is the old-style condition powder or worm powder in the feed. It will work as long as the mule is not opposed to the taste of the drug.

The secret of our treatment is the individual dose. It matters little whether you annoy your strongylus with oil of chenopodium, santonin, tartar emetic, kamala, or any other anthelmintic, as all these drugs have proved efficient in the use of centuries. But it is very important to make sure that your patients really get the proper dose under proper conditions. By proper dose I mean a dose of the worm drug below the maximum, but given for several days, followed by a purge, according to weight and physical condition of the patients. By proper condition I mean to follow the rule of common sense. The time of extra hard work, hot weather, or cold wave would do anything but help you to success.

From the fact that my firm has treated up to the present time approximately 9,000 head in the past three seasons, you may conclude that the treatment has introduced itself well. It is far from being a complete success, as our worst enemy, the parasite in the blood, is well nigh beyond our reach through oral medication.

We are bending our efforts to find ways and means for an application of powerful anthelmintics that can be introduced into the circulatory system through the jugular vein or subcutaneously. We feel that these drugs have to come from the powerful arsenic compounds, such as salvarsan, etc.

Drs. James A. Waugh of Pittsburgh, Pa., and James B. Paige, of Amherst, Mass., have recently written the JOURNAL that they have a number of full volumes and odd numbers of this JOURNAL and also the *American Veterinary Review, Journal of Comparative Medicine and Veterinary Archives,* and the *Veterinary Magazine,* which may prove of value to some institution or individual striving to complete their sets of these various publications. Those interested in such duplicates may obtain more detailed information through correspondence with Drs. Waugh and Paige.

FIELD OBSERVATIONS IN THE CONTROL OF ABORTION DISEASE[1]

By GEORGE M. POTTER, *Manhattan, Kans.*

VETERINARIANS everywhere recognize abortion disease as one of their most serious problems. Every particle of information that in any way adds to their store of knowledge concerning it is of great importance to them. The writer, having studied the problems presented by abortion disease over the greater part of a large State for more than two years, believes that an account of his observations may contribute something to the general fund of knowledge and possibly prove helpful to others like himself who are seeking a way to control this disease.

The work of which this paper is a report was conducted under the auspices of the Extension Division of the Kansas State Agricultural College. The writer had been engaged in educational work in the control of hog cholera and other diseases. At the meetings of farmers conducted over a large portion of the State, the questions asked concerning abortion disease were practically as numerous as those relating to the subjects under discussion. The need for work in abortion control was too apparent to be ignored. The writer is one who believes that we have sufficient information concerning abortion disease to warrant an attempt to control it; consequently the matter was laid before the proper persons with the recommendation that an educational campaign for the control of the disease be begun. A conference of the heads of departments interested in the subject was called, and the writer was instructed to draw up a project and undertake the work. Instructions were also given to prepare a bulletin comprising the best available information adapted to Kansas conditions. This bulletin was subsequently published as Experiment Station Circular No. 69, "Contagious Abortion of Cattle."

The work contemplated was of pioneer nature. Except for work done by investigators at some of the foremost veterinary colleges, there was no pattern to follow and no known precedent for systematic work on such a scale. The work had to be pieced together from the mass of seemingly contradictory theories and facts and made to apply to the conditions peculiar to that section. The object was to combat the great mass of misinformation that has grown up

[1] Paper presented at the fifty-sixth annual meeting of the American Veterinary Medical Association, New Orleans, La., November, 1919.

about this disease and convey the idea that owners themselves can do much to check the ravages of abortion disease. It was realized in the beginning that abortion control as such would not take readily with dairymen and stockmen, therefore it had to be coupled closely to the campaigns for general herd improvement being carried on by the animal husbandry and dairy departments. Also the known difficulties of treatment and the lack of dependable immunizing agents necessitated that preventive rather than curative methods be taught. In outlining the project it was provided that the work should be conducted with members of cow-testing associations, cattlemen's associations and breeders who were following definite systems of herd improvement. Where success depends on conscientious attention to details and continuity of effort over a considerable period, careless and fickle men could not be used as co-operators. The program was so arranged as to distribute the work among all classes of stock and disseminate information to all parts of the State.

The method of conducting the work was by means of lectures and demonstrations. It was deemed necessary, in view of the chronic nature of the disease, to keep the herds with which we were working under observation for a period of at least a year. Dependable men who wished to eliminate the disease from their herds were chosen as co-operators and arrangements were made to visit them quarterly. At each visit conditions were studied and a lecture given for the benefit of interested owners of the community. Whenever suitable subjects were available, demonstrations of treatment were given. Co-operative work of this kind was conducted in 6 counties pretty evenly distributed over the State. The itinerary was arranged in cycles to avoid needless expense and loss of time.

The subject matter taught consisted of the principles of preventive medicine, and included guarding the herd against introduction of the disease, isolating affected cows to prevent dissemination of infection, treatment of affected cows to promote recovery and preserve the reproductive function, and the building of herd immunity through selection of resistant and immune cows.

Great care was taken to impress the fact of the infectious nature of the disease, and the various complications and great range of symptoms were explained. The cause and the manner in which the inspection spreads were given. Owners were urged to use great caution in introducing breeding animals into their herds and under no circumstances to bring in animals of unknown origin and breed-

ing. They should be watchful to prevent contact with diseased animals.

Limitation of infection through prompt isolation of affected animals and destruction of infectious material was given as one of the cardinal principles of preventive medicine. The danger presented by the discharging but unrestrained cow was enlarged upon.

The urgent necessity of prompt and proper treatment was emphasized. The delicate nature of the reproductive organs, the possible complications and the consequences of neglect or improper treatment were pointed out. An effort was made to impress the importance of competent veterinary service, especially where valuable animals were concerned.

Finally, we sought to convey to the owners the hope we have for the ultimate control of the disease. Especial emphasis was laid on the immunity conferred by the disease which caused it to subside in herd after herd. Where a very large percentage of cows aborted but once and afterwards gave birth to normal offspring, it became almost criminal to sacrifice valuable herds or individuals without an effort to restore them to health. The owner should strive to build up a herd immunity through the selection of prolific, resistant and immune cows and their offspring. Abortion disease was not easy to overcome, but the owner could accomplish much through intelligent herd management to control it and keep down the losses.

The work with dairy herds and beef herds kept under farm conditions followed the accepted methods employed by Eastern workers, but each herd was regarded as a study in itself because of the varying conditions under which cattle are kept. But with the beef herds kept under range or semi-range conditions different methods had to be employed. Little work had been done with range abortion, so it was necessary to develop new methods that would meet the requirements of the disease without unduly disturbing the present system of conducting the business. The writer formulated a plan, based on the control of breeding and common practices of herd management, which was published in Kansas Experiment Station Circular No. 69. Briefly it is as follows:

It is a common practice, in the handling of beef herds, to breed for spring calves. Many consider the first week of April as a favorable time for calving to begin. The bulls would then be put with the herd in the last week of June. Where abortion disease exists the bulls should be withdrawn as soon as sufficient time has elapsed for breeding the herd, in order that the calving period may

be concentrated into as short a space of time as possible. Abortions tend to occur at from 5 to 7 months of pregnancy. Experience has shown that the abortions will then occur from the latter part of November on into February. The cattle at that time are on the feeding grounds where they are under daily observation. All aborters and those threatening abortion can then be removed to a separate inclosure, appropriately treated and retained in isolation until recovery is complete. All that are going to abort will have aborted and been cleaned up before time to return to the range. The cows then go out clean and there are none to disseminate infection, and as most of the aborters will have become immune the disease will subside. Those that would abort a second time would be caught up during the second season.

This plan permits of the employment of the principles already enumerated. Through it the owner protects his herd from contact with diseased animals and prevents introduction of infection. Dissemination of infection is prevented by isolation and treatment of aborting cows. It further limits the spread of the disease, in that abortions are limited to the time of the year when the cattle wander less widely and commingle less extensively. The plan contemplates the building of a herd immunity through culling of the nonproductive cows. The cow that aborts a second time, indicating a lack of resistance, and the shy breeder are sold for slaughter to avoid transmitting those tendencies to any offspring they might eventually have. The cow that produces a healthy calf each year, in spite of the presence of the infection, and the cow that acquires a strong immunity following a single abortion are kept to transmit these desirable tendencies to their offspring. The herd is to be replenished always from the offspring of its resistant members. Consequently, all movement is away from the herd. The necessity of introducing new material that might be either infected or susceptible is thus avoided.

It will be seen that this plan harmonizes with the accepted methods of herd improvement and does not require the abandonment of present herd practices. The writer has seen these principles applied with gratifying results and in a manner that convinces of the practicability of the plan. He recommends this method wherever large numbers of cattle are to be handled, as in large pastures, in forest reserves and wherever a limited range permits of the control of breeding.

To summarize: Control breeding to concentrate the calving period

and bring the abortion at a time when the cows can be kept under observation. Isolate aborting cows and treat them according to approved methods. Retain valuable cows and replenish the herd from its own increase.

Recently work was begun with 14 cow-testing associations. It is believed that by securing the cooperation of such organizations larger numbers can be reached with less expenditure of energy and funds; reliable men, who will be most apt to give control measures a fair trial, will be enlisted; the character of the organization will be most likely to provide the continuity of effort necessary for success, and the results will be more apparent and convincing, likewise more valuable for study, than where scattered widely among an unorganized group. The object is to teach those principles already outlined. The veterinary specialist co-operating with the dairy specialist in charge of cow-testing work will strive to bring about better sanitary conditions and better herd practices for conserving animal health. An effort will be made to secure competent veterinary service where it is lacking and its more extensive use will be urged.

Another enterprise, for which no precedent has been found, was recently started. In western Kansas is a section of open range, roughly 10 miles square, which is used by 30 owners running 2,000 head of stock. The business of raising cattle there is in an unsatisfactory condition and abortion disease has made its appearance on the range. We could not hope to control the disease under those circumstances except through concerted community action. An organization, therefore, was formed for the dual purpose of controlling disease and improving the live-stock industry of that section. The Animal Husbandry Department of the Experiment Station was called on for assistance in working out details, and the Forest Service of the United States Department of Agriculture supplied sample forms for constitution and by-laws. To keep up interest a comprehensive program requiring a period of three years for its completion has been adopted. All phases of the industry will be covered, including breeding, feeding, marketing, pasture management, forage crops, etc. A field day will be held each year to popularize the association and arouse enthusiasm. For controlling the disease the plan already described will be used. All subjects on the program will be given in relation to their effect on the reproductive efficiency of the herd. It is of course too early to say what results will ensue. As a rule success comes slowly in such an undertaking, but there seemed to be no other way and it was worth while to make the effort.

The results we hope to accomplish through this educational campaign are these: To initiate better herd practices by dispelling the ignorance and misinformation now so prevalent among stockmen; to check the losses resulting from the sale of individual aborters and aborting herds; to prevent the sacrifice of valuable breeding animals and the breaking up of purebred herds that may represent the work of a man's lifetime in constructive breeding; and last but not least, to prevent the further dissemination of the disease by breaking up the practice of "unloading" diseased animals and herds.

Work such as the foregoing could not be carried on for long without certain facts becoming apparent, and it is believed that the observations made will interest this audience. The most outstanding fact is the spontaneous subsidence of the disease. That immunity is conferred by abortion disease has been pointed out by numerous other writers, but this paper would be incomplete without emphasizing it further. The disease has subsided in herd after herd where the owners have not become panic-stricken and shipped them. This is such a constant occurrence that the writer does not hesitate to predict the cessation of the disease after two years. Circumstances may, of course, play a part in some cases to prolong the outbreak, and we may have evidence in the form of occasional abortions, retained afterbirths or sterility that infection still lingers, but the heavy losses will have subsided and the disease may then be said to be under control. That immunity is conveyed is proved by the very low percentage of second abortions. In one herd which was large enough to make the figures of value this percentage was as low as 6¼ per cent. It is this fact that lends hope to the effort to control abortion disease and impels us to strive in a large way to overcome it.

Another characteristic of breeding cattle has been brought out by the work, which, taken in connection with immunity, will be of great value in maintaining the reproductive efficiency of a herd. One of our co-operators, who is a breeder of large experience and keen observation, has found that certain of his cows produce vigorous calves year after year to a ripe old age, in spite of the presence of the virus of abortion disease. They are exposed in the same degree as others but their resistance permits them to reproduce without interruption. Information from other sources seems to indicate that offspring from these resistant mothers may inherit these same tendencies. These prolific, resistant breeders and their offspring should be invaluable and priceless to a man seeking to develop a fine herd of purebreds. Prolificacy is receiving great emphasis in swine

breeding and it must also receive greater emphasis in our cattle breeding in future.

The experience of the writer leads him to believe that the disease among range cattle is pure abortion disease. This belief comes from the readiness with which immunity is acquired and the relative infrequency of the common complications. Retained afterbirths are not nearly so frequent as among dairy cows; purulent conditions follow less often, and sterility is markedly less. Losses may be enormous, but the outbreak subsides rapidly and a large proportion of the animals recover completely. The time required for the disease to subside seems to bear some relation to the virulence of the attack. The greater the virulence and the larger the number attacked at one time, the more positive the immunity and the more quickly will the herd become immune. A less virulent virus that affects but a few at a time may persist longer in the herd.

The underlying reason becomes apparent when we consider the mode of living of the range cow. She lives a natural life, out of doors, and does not have to combat the stable infections that surround the dairy cow. She has but to produce her calf and suckle it until it can lead an independent existence. She is not subjected to the weakening influence of the artificially stimulated function of milk production of the dairy cow, consequently she has greater resistance to ward off the effects of the disease. Following abortion she has only to eat grass and get well and prepare to produce another calf. This belief is strengthened by the observation that dairy herds in that same region and small beef herds that are confined to insanitary surroundings are affected similarly to dairy herds in other sections.

A knowledge of the manner in which abortion disease is transmitted is of utmost importance. The writer has observed a method of transmission which, if it has ever been reported, has never been sufficiently emphasized. Cows have been observed to lick up the fresh discharge from cows that have aborted. Stockmen, when the matter was mentioned to them, have spoken of seeing the same thing. We recognize the ingestion of the virus as probably the most frequent channel of its entrance into the animal body, and we say that it occurs through contaminated feed. On the range, however, where the acreage per animal is large, the amount of food actually contaminated is small and the chance of its being picked up relatively slight. Moreover, climatic conditions are such that the virus would be quickly killed. Clear weather is the usual order, the sunlight is intense, the atmosphere dry, and the winds assist the desiccating

action. It is quite possible that a single day of bright sunshine would so dry up and sterilize the small masses of discharge that they would be harmless so far as transmitting the disease is concerned. But where these discharges are licked up in their fresh state we have a decidedly different condition. We know that these discharges are teeming with the abortion organisms and but very small amounts of discharge are required to establish the disease. The abortion organisms are taken into the body in a fully virulent and viable state and promptly initiate the disease in susceptible animals. To the writer these facts have great significance as a possible explanation of the manner of dissemination of abortion disease among range cattle. It furnishes one more argument in favor of segregating aborting cows.

The question of the natural period of incubation is one on which we might with profit have more information. Two cases have come to our attention which are worth mentioning. In the first a renter had 7 milk cows with which he had no trouble. He went to a sale and bought another cow. A few days afterwards this cow aborted. He was ignorant of the danger to his other cows and took no precautions to protect them. Several of the cows were in the early stages of pregnancy. After a time 3 of these cows aborted. The approximate time of the first and the later abortions was known, and the interval was about 5 months.

In the second case a ranchman had gone to the stockyards and picked up some cows of unknown origin. In due time they began to abort. He had heard something of the disease, and he very thoughtfully "segregated" the aborters by placing them in his barn lot. This, by the way, he used for corralling his milk cows for milking morning and night. If he thought of these cows at all he considered them safe. They aborted in about 3 months. Fortunately for him, the load of stockyards cattle which aborted had not been in contact with his main herd. They were shipped back to the yards, where possibly they were again picked up by some unsuspecting rancher and taken out to start another outbreak.

These cases not only give an indication as to the length of the period of incubation but they shed some light on the state of mind of the stockman and the problems confronting the sanitarian. The question of the incubation period is one which has a very practical bearing on the measures we adopt for eradication and is one that stockmen frequently ask of the investigator.

This paper would not be complete without a word of appreciation for the intelligent assistance rendered by conscientious county agents.

Some veterinarians have made violent and indiscriminate attacks on county agents. Where there is still so much poor veterinary service these attacks can only react disastrously on the profession. No one denies that many county agents have been guilty of ill-advised and pernicious activities, yet there is a far larger number who are willing, nay, anxious, to meet the veterinarian more than half way and co-operate with him in building a better animal husbandry. We wish also to commend very highly the public-spiritedness of those men who co-operate with us in the work. Where many feared to work with us because of the supposedly unfavorable publicity it would bring, these others forgot themselves in the desire to be of service to their communities. We venture the assertion that whatever publicity they may get will be altogether in their favor.

The experiences of the work seem to warrant certain recommendations:

The greatest progress in the investigation and control of abortion disease can come only when laboratory investigation and field work are combined. Neither alone can reach its maximum efficiency. The field worker must be an investigator as truly as the laboratory man. Many cases come to the attention of the field man that should be thoroughly investigated by laboratory methods. On the other hand, the laboratory man needs the experience and observations of the field man to supplement his work. Many times the writer would have welcomed the opportunity to carry certain problems into the laboratory.

One of the greatest needs of the work at the present time is the correlation of its various phases. Our present medical knowledge is altogether inadequate for controlling abortion disease. We must join with the animal husbandman in working out a system of hygiene that will be practicable for the stockman to put into operation on his farm.

The work must be directed by proper persons. In the writer's experience, laymen who, without knowledge of the disease or conception of its requirements, assume to direct operations have often proved to be a more serious obstacle than the difficulties of the work itself.

Finally, we must convey to the live-stock interests the hope that is in us for the ultimate control of abortion disease. The more the writer studies the situation the more firmly convinced is he that the disease can be controlled. Let us go on with the knowledge we now have, and learn by doing. Let us preach the hopeful view.

THE PURPOSE AND SCOPE OF VETERINARY EXTENSION WORK[1]

By L. C. KIGIN, *Lafayette, Ind.*

THE purpose of all extension work is to educate the masses along certain lines of work that will be beneficial to community welfare. In this article I shall limit myself to one phase of extension activities, namely, veterinary extension work. For convenience and clearness I have classified this subject under the following heads: Disease-prevention work with veterinarians, and disease-prevention work with farmers.

Both of the above lines of educational work are important, but the former is far more vital to the live-stock interests than the latter, for many reasons. If the veterinary profession takes the place it should in rendering service to the live-stock men of this country, every member of the profession must be kept informed regarding results of all lines of research work that may be of assistance to him in solving the many problems that confront him, thereby enabling him to render more efficient service to the community in which he is serving.

EXTENSION WORK AMONG VETERINARIANS

In Indiana we started our extension work among veterinarians in March of the present year. This particular series of meetings ran for one week in different sections of the State. The subject discussed was the differential diagnosis of swine diseases. Dr. W. W. Dimock of the Ames, Iowa, Division of Veterinary Science accepted our invitation to come to our State and discuss this important subject. The meetings were well attended, and the interest manifested encouraged the holding of future meetings.

The second series of meetings was held the first week of June, when Dr. W. E. Cotton, of the Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C., discussed contagious abortion.

The third series of meetings was held the second week of September. Dr. E. T. Hallman, of the Michigan Agricultural College, discussed and demonstrated his method of diagnosis and treatment of sterility among breeding cattle. Clinic material was provided for each meeting.

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[1] Paper presented at the fifty-sixth annual meeting of the American Veterinary Medical Association, New Orleans, La., November, 1919.

Every wide-awake practitioner in the State attended some or all of these meetings; however, it required special effort to interest many busy practitioners and convince them that they could afford to give valuable time to attend these meetings. Letters were sent out as far in advance as possible announcing the intended meetings. A follow-up letter was then sent out as soon as arrangements had been completed, giving date, time and place. A third letter was sent as a general reminder just a few days in advance of the meeting. The follow-up letters required much additional work, but we believe this method is largely responsible for the good attendance.

Our plan in the future is to hold series of quarterly meetings. In case it is deemed advisable to hold an extra meeting to discuss some important phase of preventing the spread of a certain disease, we shall do so. Such publicity should be given this educational work as will show farmers that an effort is being made to help the practicing veterinarian to be better able to serve him when he needs his services.

The Extension Department, State Veterinary Department and Bureau of Animal Industry should co-operate in such an undertaking. The State Veterinary Department and the Bureau of Animal Industry, Division of Hog Cholera Control, are deserving of much credit in making the meetings that we have held a success. Today every State has an extension department, and they should be giving some aid to the veterinary profession. It was an easy task in our State to start this move. Our Superintendent of Extension Work could see instantly the opportunity for advancement if such work was properly directed. He has given all the encouragement and aid possible in making these meetings a success. What has been done in Indiana can be done in other States if a concerted effort is made by the veterinarians of the State.

EXTENSION WORK AMONG FARMERS

No veterinarian doing extension work can reach as many farmers with his message as the local veterinarian. Therefore it would seem advisable to try to disseminate his teachings through this channel. If we fail to recognize this opportunity the maximum results will not be accomplished. Meetings in the rural districts to inform the farmer relative to the nature of hog cholera and other infectious diseases have been an important factor in controlling such diseases, but are we sure it was advisable to devote our best efforts along that line? The weak link in the chain was the inability to reach the

men in the community who would stay away from the meeting, but who needed the information worse than the participants. How, then, can such men be reached? I think through the local veterinarian who visits many such farms daily.

Of course we can not expect the local veterinarian to carry our message unless we give it to him and direct him in a way to use it. The most satisfying and convincing argument we can put up to the farmer is service. It seems to me this should be the uppermost thought in any extension veterinarian's mind. What does it gain a man to talk to a body of farmers, lauding the value of veterinary science, but neglecting to make such scientific services possible? Every well-built house has a good foundation to stand upon. The same thing is true of all structures. Misunderstanding and lack of co-operation are deadly enemies to progress. This has been the case with veterinarians and farmers too generally throughout our land. The opportunity for extension veterinarians to diminish such a condition has no limit. The scope is beyond our power of comprehension. Great accomplishments will never be made by keeping the farmer ignorant of many phases of disease prevention, but the untiring efforts of every veterinarian to perform his work more scientifically each day will elevate his professional skill in the minds of all his clients, and would tend to discourage the desire of the farmer to try his hand, for instance, in vaccinating his own hogs as well as his neighbor's. To pass laws forbidding him the right to exercise his own judgment relative to doing his own veterinary work is becoming a more difficult task each year.

We are now passing through a reorganizing period; the time is here for policies to be changed. Those we have tried and proved valuable should continue; others that are worthless should be discarded. This may necessitate organized effort, but it will surely be worth the effort. Every accomplishment worth while has required sacrifice and effort on the part of those interested in its advancement.

WORKING WITH COUNTY AGENTS

Let me say, first, that the county agent in Indiana is too busy with other matters to practice veterinary medicine and surgery. I realize we are more fortunate than some other States along this line, but there is a reason. Proper leadership is responsible. We ask for the co-operation of the county agent in putting on farmers' meetings; he makes arrangements for meeting places, sends out notices of the meetings to the farmers of the community, and takes part in the

discussion of the subject, but confines his remarks mostly to the management side of the problem. The subjects we discuss before a body of farmers are sanitation and the methods of controlling infectious diseases. We discourage the farmer in attempting to diagnose or treat any disease, but insist upon his calling in his local veterinarian. This method has seemed to meet with general approval in Indiana.

In conclusion I want to emphasize the importance of veterinary extension work in as many States as possible in the future, as the farmer should be taught the importance of consulting his local veterinarian whenever disease appears in his herd. Furthermore, the farmer should be directed along intelligent lines of disease prevention. The importance of farm sanitation and herd management can never be over-emphasized. Also the closer we can bring the farmers and veterinarians together the more effective will be the control of animal diseases in this country.

Dr. A. C. Kirby, formerly of Page, North Dakota, has sold his practice to Dr. H. C. Vestal of Dossel, Minn., who will assume charge immediately. Dr. Kirby will make his future home at Carthage, Missouri.

Dr. B. C. Parker of the States Relations Service has been making a tour of Alaska but will shortly make his headquarters at Kodiak, where he will assume charge of certain veterinary matters for the Territory. He believes Alaska has a great future and that the veterinary profession has a big opportunity in this relatively new field.

Dr. Jirozo Noguchi, Chief Expert in Animal Industry, of Chosen, Japan, is visiting the United States for the purpose of studying the organization of the Bureau of Animal Industry. He is likewise investigating policies of disease control and the methods employed in horse and sheep husbandry.

Dr. H. S. Murphey, Professor of Anatomy at Ames, Iowa, spent a week in Washington recently, attending the convention of the American Association of Anatomists.

Dr. I. C. Mattatall, Veterinarian for the Health Department of the Panama Canal Commission, is spending a well earned vacation of three months visiting his many friends in the United States.

THE UNITED STATES ARMY MEAT SUPPLY[1]

By Major GEORGE A. LYTLE, *Veterinary Corps, United States Army*

IN presenting the relation of the Veterinary Corps to the United States Army meat suply, it is believed this subject will be found important as well as interesting and that the results of this work will be shown to be satisfactory. This work is important because of the value of the products handled in comparison with other work of the Corps. The Army horses, estimated at 306,000, having an approximate value of $200 each, showed a total money value of $60,200,000, whereas the total value of meat and dairy products inspected at central purchasing points was $474,000,000, almost seven times the value of the horses. Important also because of its intimate relation to the health of the troops. The health of the public animals is essential largely from a financial standpoint, while the health of the troops has a far more important significance. Important also for the reason that the meat scandal of the Spanish-American War has left an impression on the minds of the American people which will never be eliminated. Therefore, in accepting the responsibility for the quality and condition of the meat foods for the American Army, the Veterinary Corps did so conscious of its full importance. It is interesting for the reason that like much of the work of the United States Army, the inspection of meat and dairy products was developed under the pressure of constantly increasing purchases. There was little time for deliberation or careful planning. Few trained men were available at the beginning of the war, consequently the work of instruction was carried on conjointly with the extension of the work. That this work was satisfactory will be shown by statements of purchasing officers.

The meat supply for the United States Army is calculated from what is known as the ration allowance—that quantity of food allowed by the Army Regulations for the subsistence of one soldier for one day. This allowance includes, in addition to the meat component, flour, fresh vegetables, dried vegetables, dried fruit, coffee, sugar, milk, butter, vinegar, etc. The meat allowance of the ration is 20 ounces of fresh beef or mutton, or 16 ounces of canned meat or fish, or 12 ounces of bacon, the usual proportion of these articles being 50 per cent of fresh beef, 30 per cent of bacon, 10 per cent of corned beef and 5 per cent each of canned roast beef and

[1] Paper presented at the fifty-sixth annual meeting of the American Veterinary Medical Association, New Orleans, La., November, 1919.

corned beef hash. With these figures as a basis we can easily determine the quantities of the various meats or meat products necessary to supply an army whose strength is known. For example, we know that for every thousand men in the field there must be supplied daily 625 pounds of fresh beef (or mutton), 225 pounds of bacon, 100 pounds of canned corned beef and 50 pounds each of canned roast beef and corned beef hash. In addition to these amounts there must be established a reserve of these supplies to be used in case of accidents, as wrecks, fire, capture or destruction by the enemy or elements.

The determination of the meat requirements of an army, then, with the ration allowance as a basis and the strength of the army or command known, is but a matter of multiplication and production. When, however, the military strength numbers up into the millions the matter of production becomes a real problem. For example, an army of 4,000,000 men will require a daily allowance of 2,500,000 pounds of beef, fresh, 900,000 pounds of bacon and 300,000 pounds of meat, canned, requiring a daily supply of more than 10,000 cattle and 22,000 hogs. These figures will give some idea of the task of maintaining a meat supply for an army.

The Director of Munitions in his report for 1917 and 1918 has presented this matter in a most impressive manner. He visualizes the American Army of 3,700,000 soldiers as one gigantic figure in khaki, compresses the war period into one hour, "the dinner hour," and the amount of food issued into a single meal. He says: "Let us start off with the main course; the roast of beef placed before this giant weighs 800,000,000 pounds; this is flanked by a rasher of bacon weighing 150,000,000 pounds more. The loaf from which his bread is cut required over 1,000,000,000 pounds of flour in its making, and to spread it required a lump of butter weighing 17,500,000 pounds, and another lump of 11,000,000 pounds of oleomargarine. As a side dish there is provided 150,000,000 pounds of beans, baked, more than half of them delivered in cans, already cooked and flavored with tomato sauce. The potatoes for this meal weighed 487,000,000 pounds, and to add gusto to his appetite there were served 40,000,000 pounds of onions. Scattered over the table are such items as 150,000,000 cans of peas, corn and string beans. His salad contains 50,000,000 cans of salmon and 750,000 tins of sardines. The large bowl of tomatoes received 190,000,000 tins of solid pack, and for dessert he had 67,000,000 pounds of prunes and 40,000,000 pounds of evaporated peaches and apples. The sugar for sweetening the

various dishes on the table weighed 350,000,000 pounds, and he washed it down with a draught made from 75,000,000 pounds of coffee diluted with 200,000,000 cans of evaporated milk, and for this meal the American people paid $727,092,430.44. It is estimated that each soldier weighed 12 pounds more at his discharge than when his enlistment or the Selective Service Act brought him into the Army, hence this giant arose from that meal with 45,000,000 pounds of added brawn and energy which will be felt for generations to come."

It was in the preparation of the meats and dairy products for this meal the Veterinary Corps had its part. The beginning of the war found the meat-inspecting force of the Army limited to three Regular Army veterinary officers in the United States, three civilian veterinarians, and one retired enlisted man. The former were stationed at Chicago, Kansas City and Buffalo, the latter stationed at San Antonio and El Paso, Tex., and Little Rock, Ark., while at Omaha a retired quartermaster sergeant had for a number of years looked after the meat purchased at that point, in addition to his other duties. These men were in no way connected, and what little uniformity in the work existed had been established through the interchange of purchasing officers. Chicago, being the important meat-producing center, was perhaps the most firmly established. For many years the veterinary officer on duty at that point had been associated with a school of instruction for quartermaster officers and enlisted men in subsistence procurement including inspection. This association had made him familiar with every phase of the work and won for him the confidence of, and an intimate acquaintance with, a considerable number of subsistence procurement officers.

Prior to April, 1917, the work of the Chicago Depot had been going along very quietly, the monthly requirement purchased approximating 150,000 pounds of meats, canned, and 500,000 pounds of bacon. During that month (April, 1917) the total value of the meat foods purchased, at that depot, was $304,000. In March, 1917, when war seemed altogether probable, there being no veterinary officers available, the Chicago inspection force was increased by the addition of two civilian veterinarians, and in April three men were added to the Kansas City force and force established at the New York Depot. As soon as Reserve Corps officers were available the civilian veterinarians on meat inspection duty were recommended for and received commissions, and request was made to the Office of the Surgeon General for additional personnel, which request was

promptly granted. For the most part these reserve officers were young and inexperienced, requiring constant supervision and direction, but a few of them were experienced, and all of them were eager and willing. The value of meat purchases, which was $304,000 in April, increased to $1,275,000 (4 times) in May, to nearly $3,000,000 (10 times) in June, and to more than $5,000,000 (16 times) in August. In April the officer in charge of the inspection work in Chicago, "in addition to his other duties," was appointed a member of a Board of Veterinary Examiners for the examination of applicants for commissions in the Veterinary Reserve Corps.

The need for proper supervision of the meat supply for the Army was felt early, as evidenced by the request from zone supply officers for the assignment of Bureau of Animal Industry inspectors to depots, camps and posts. Upon request of the Secretary of War, a number of Bureau employes were assigned to this work, but the increasing work of the Bureau and the shortage of help due to the draft and enlistments in the Army made their releases at the earliest possible moment necessary, and in May, 1917, a recommendation was made to the Office of the Surgeon General for the establishment of the school of instruction in meat and dairy inspection at Chicago, from which officers might be drawn to cover the inspection work at camps and posts in order to release the Bureau employes. In June the first group of 30 arrived for instructions. Bear in mind, please, the increase in purchases indicated above.

The entire meat procurement, including supplies for camps and cantonments, was now centralized in Chicago, and with it the inspection. Traveling inspectors had been sent out to standardize the work and establish a comprehensive system of reports, and the work was placed on a uniform basis. But the extension of the work had taken practically all of the men who had by now become familiar with the various operations, and a new force had to be organized. Had the recommendation for the establishment of that school of instruction not been made at an early date it probably would not have been made at all. No classroom was now available at the Depot, every available square foot being required for quartermaster corps operations and storage. The experienced men were scattered to points outside of Chicago, and the work increased as has been indicated above, some of the packing plants now being in full operation night and day. To make matters worse, "that 30" came straggling in by twos and threes over a period of weeks, and not until a wire had gone to Washington was information received as to the number

being sent. I fear those "rookies" did not receive a very cordial welcome. However, one of the large packing houses very kindly furnished a most delightful classroom and the necessary equipment. The new men were paired off with the older ones, and thus with lectures and daily conferences the work went on. By August the value of the purchases had gone to $5,000,000, in September to $5,500,000, and to $8,500,000 in October. The meat-producing industries began to feel the weight of the constantly increasing demands put upon them. Additional delivery points were sought out and inspectors assigned to them.

Contractors began to urge a modification of specifications and a relaxation of the inspection on the ground that it was impossible to furnish the quantities of the quality required. Some of their requests were granted. The "square cut bacon bellies" gave way to the "extra short clear" in order to utilize a larger proportion of the hog, and the minimum weight of dressed beef carcasses was reduced from 500 pounds to 475 pounds, and later to 450 pounds and then to 435 pounds. No changes in the specifications were made, however, without consultation with the veterinary officers, who, because of their intimate knowledge of existing conditions, were in a much better position than the purchasing officers to determine whether such changes were necessary. Many proposed changes were shown to be unnecessary and advanced only in the interest of the contractors.

A development which still further taxed the inspection force was the establishment of a chain of freezers to hold the necessary reserve of frozen beef. New York City alone had a freezer capacity of 100,000,000 pounds, and from New York the line of freezers traced back through Elmira, N. Y., Scranton, Pa., Buffalo, Cleveland, Detroit, Chicago, Des Moines, Omaha, Denver, Pueblo, and Ogden, Utah. Into these and 38 others was shipped fresh beef to be frozen, and from them went out frozen beef to the seaboard as required.

Let me pause here just long enough to tell you just what part the Veterinary Corps took in this work. As you may know, practically every article purchased for the Army is covered by a printed specification. That covering the fresh beef is as follows:

"1. *Beef, fresh:* To be good in quality and condition, fit for immediate use, and equal numbers of fore and hind quarters to be delivered, including all the best cuts; hanging tenderloin and kidney fat removed; no carcass to weight less than 450 pounds when trimmed; necks to be cut off perpendicularly to the line of the vetebræ, leaving but 3 cervical veterbræ on the carcass; the shanks

of fore quarters to be cut off 2 inches above knee joint and of hind quarters at the hock joint (commercial cut), and to compensate for the shank bone thus allowed to remain 3 1-2 pounds will be deducted from the weight of each hind quarter; difference in weight between fore and hind quarters not to exceed 25 pounds per carcass (one rib to be left on each hind quarter). Neck, kidney fat, beef from bulls and stags and from females (except from spayed heifers) will be excluded from delivery.

"Such quantities of fresh meat as may be required by the Quartermaster from time to time shall be delivered to him in bulk at the quartermaster's storehouse or other designated place on such days and at such hours as he may prescribe under the direction of his commanding officer.

"When it is proposed to furnish fresh beef at posts at temperature not greater than 50° F., that fact will be clearly stated in bid."

Specifications covering the other meat food articles are equally ample and comprehensive.

The Veterinary Corps personnel reported upon the sanitary condition of factories and freezers and selected practically every carcass of beef shipped to the United States Army abroad or used in the manufacture of canned corned and roast beef.[1] After selection, the beef carcass was trimmed, quartered, weighed, sacked, marked, loaded properly and into cars which were clean and substantial and well iced under their supervision, and the car number and seals were reported to the veterinarian on duty at the freezer to which it was consigned. Upon arrival at the freezer the veterinarian on duty there received the car from the carrier; if it could not be unloaded promptly he saw that it was kept iced. When unloaded he examined the contents, saw that the beef was spread to insure rapid and uniform freezing, kept track of the lots, removed the covering from a few quarters to satisfy himself as to its condition, and reported faulty trimming or inferior quality. He inspected outgoing shipments to see that the products were properly frozen, that the cars into which they were loaded were clean and properly cooled, that quantity and weight loaded were correct, and inserted the necessary figures on billing furnished him. The veterinarians saw meat for canned products boned, trimmed, cured, cooked and canned in a sanitary and proper manner, watched the closure of the cans and the lacquering of them, saw them tested for defective cans before being boxed, examined the boxes, supervised the marking and strapping,

[1]As stated by Dr. C. J. Marshall, former Assistant Director of the Veterinary Corps, in his paper on "The United States Army Veterinary Corps Service of the Interior," page 482 of the February JOURNAL, the Bureau of Animal Industry conducted both the antemortem and postmortem inspection on all animals slaughtered in official establishments, the meats of which were later prepared and handled under the supervision of the Veterinary Corps of the Army.—EDITOR.

counted the cases into the cars, and furnished seals and car number, together with other data for the accomplishment of the bills of lading, and in more than half of the cases accomplished the billing themselves. With the bacon they watched the selection, trimming, piling, curing, overhauling, brushing, smoking, wrapping, boxing or canning, weighing, marking and shipping. Hams were all selected, tried, smoked, wrapped, weighed, boxed, marked and shipped by this Corps.

Reports were made each morning showing the various operations carried on the preceding day, the amounts of beef accepted and shipped, the quantities of bacon placed in cure, smoked or canned, the number of cans filled, amounts of beef received at or shipped out of freezers. All movements of fresh beef were reported by the veterinary officers by wire at the close of each day's business. These data were used by the Purchasing Officer in his work of procurement.

The manufacture of oleomargarine and butter was carefully watched, windows screened, ample drainage required and the necessary sanitary precautions taken. The experiences with centralized butter and its manufacture prompts the statement "Supervision of these plants is badly needed" and was responsible for the recommendation that no centralized butter be purchased by the Army unless manufactured under strict sanitary conditions.

Of the hundreds of millions of dollars expended for meat food products from April 1, 1917, to March 31, 1919, not one dollar was paid without the certification by a veterinary officer.

At camps these officers supervised the supply of meat and milk, inspected it upon receipt, supervised the storing, handling and issue, and saw that the wagons were clean and the meat was handled in a sanitary manner to insure its delivery to the kitchen in good condition.

In November, 1918, a very vigorous effort was made to have the work of selecting the army beef taken out of the hands of the Veterinary Corps and placed, together with the selection of beef for the Navy, Marine Corps, and the Allies, in charge of the Bureau of Markets. This effort was approved by the Secretaries of War and Navy, but was abandoned after a two weeks' trial. In fact, it was never inaugurated, as the Bureau of Markets had neither the men to do the work nor the necessary knowledge of the Army and Navy requirements to carry it on.

Meanwhile the values of meat purchased were steadily climbing. In January, 1918, they had gone from the $8,500,000 in October to

more than $16,500,000, and by April were more than $25,000,000. During this enormous increase the work of training veterinary officers and sending them out, whipping up the slow, restraining the overzealous, adjusting controversies, fighting off interference, keeping the men informed and satisfied, had been going on.

Before the first of the year 1918 it became evident that non-professional men would have to be used wherever possible to release the veterinarians from all but the strictly professional work, and authority was requested for the induction of experienced packing-house men into the service. Upon receipt of this authority the packing houses were canvassed and a most efficient body of men secured. These men came from superintendents' offices and from the sales and manufacturing and curing departments, all alert, competent, high-priced, caught in the draft and anxious for station where their services could be used to the best advantage. These men proved to be a valuable addition to the inspection force during the months that followed.

The first group of student officers were assigned duty as camp meat and dairy inspectors in July, 1917, most of them to replace inspectors loaned to the supply officers by the Bureau of Animal Industry early in the war and whose services were now needed by that Bureau. The inspection work of the Corps at Washington was in a formative state, and probably because of their acquaintance with the members of the Chicago force these students took their problems and troubles to that office, and while no authority had been granted for such action a line of correspondence was carried on with officers in order to give them such assistance as seemed needed.

In February, 1918, the Office of the Quartermaster General began to arrange for the manufacture and canning of creamery butter at producing points. It was learned that it was intended to have this work done under the supervision of inspectors from the butter and egg boards. The services of the veterinary inspection force were offered and accepted. There were already two experienced butter men on the force at Chicago, and under them a special class of five officers was organized for a course of intensive training in this work. By the time arrangements for the purchase of these supplies were completed the men were ready, and in May and June they supervised the making and canning of more than a million pounds of butter. This class afterwards rendered valuable service along this line. When in September, 1918, the Army commandeered 80 per cent of the butter in cold storage in the United States these men graded,

weighed and certified for payment 6,217,897 pounds of butter having a total value of $2,881,226.27, and more than 3,000,000 pounds of cheese valued at $900,000 more. A large measure of the credit for the success of this undertaking is due to Dr. Charles C. Wright, now with the City Health Department of Portland, Oreg., and Dr. J. C. Wheat, with the Sheffield Farms Co., stationed at Malone, N. Y.

All this time the meat purchases were still increasing. In August, 1918, they had exceeded $33,500,000 in value; in September, $34,500,000; in October, $50,500,000, and in November, when the armistice was signed, they had reached a total valuation of $51,397,344.90.

Long before this point was reached, however, things were going smoothly with our work of inspection, and time was found to make tests in connection with the boning of beef for oversea shipments in the effort to save shipping space. The test proved to be a success, as evidenced by the following cabled report from France: "On account of issuing 16 ounces of boneless beef for 20 ounces carcass, the cost of boneless beef is only one-half higher, which is more than offset by saving in ocean freight." Basing ship's ton at 40 cubic feet at $100 makes the cost of ocean freight on carcass beef 12½ cents a pound on account of carcass beef piling 2,000 pounds per 100 cubic feet. Boneless beef piles 2,000 pounds per 50 cubic feet, or a freight rate of 6½ cents a pound, which represents a saving of $73,000 a day based on present daily issue. While every effort was made to supply boneless beef for oversea shipment in order to save all shipping space possible, its production was limited by a shortage of boners; men could not be taken from the work of boning beef for army canned meats, and this work required nearly all of the available supply of skilled laborers. However, from October, 1918, to March, 1919, almost 39,000,000 pounds of boneless beef had been delivered.

With the signing of the armistice production of meat products fell off rapidly. Due to the fact that contracts had been placed for three months' supply in advance, it could not be entirely checked at once. By March, however, only a trifle over $18,250,000 in value were delivered, when all contracts were closed and the story of the meat supply for the American Army during the world war was brought to an end.

The Veterinary Corps inspected at purchasing points from April, 1917, to March 31, 1919, the following products:

	Pounds.
Beef, fresh, frozen	448,525,595
Beef, corned	199,611,056
Hash, corned beef	100,331,228
Roast beef, canned	128,115,860
Mutton, fresh	214,700
Pork, fresh	12,524,635
Bacon	296,864,734
Ham	19,007,921
Deviled ham	26,421
Salt pork	4,000
Pork sausage	4,942,504
Lard	2,196,628
Lard compound	45,000
Lard substitute	8,370,038
Sausage, Vienna style	6,144,405
Oleomargarine	15,382,302
Cheese	8,811,026
Butter	8,522,689
Turkey	2,137,699

This represents a total of 1,261,728,441 pounds, having a money value of $473,914,827.62, not to mention 234,153,619 pounds inspected at camp, 31,454,566 pounds of meat inspected, packed and shipped for civilian relief work in Europe, and almost a million pounds of beef, fresh, frozen, inspected for the Italian Government. In all 10,956,408 pounds were rejected, making a grand total of 1,779,848,621 pounds.

From April, 1917, to November, 1918, the meat-inspection force at procurement points had increased in personal to 78 officers and 109 enlisted men, located in 102 meat-producing establishments, in 31 cities, who had been on duty at one time or another during that period at 47 procurement points. In the school 82 officers and 96 enlisted men had been trained and recommended for assignment to camps and 116 applicants examined for commissions in the Veterinary Reserve Corps.

The close of the war found enormous stocks of meat stores in the supply depots. These are being given a piece inspection by our force to enable the Government to make reclamation for defective cans delivered and to protect against loss by deterioration. It finds a comprehensive system of sanitary inspection firmly established, with veterinary detachments, numbering in all 32 officers and 87 enlisted men, in every one of the 10 subsistence procurement zones in the United States, together with sufficient personnel in China, the Philippine Islands, the Canal Zone and Porto Rico. The work of

instructing veterinary officers and enlisted men is going forward in a satisfactory manner, 12 officers and 22 enlisted men being at present enrolled.

That the work of the Corps is appreciated is evidenced by the fact that when October 30 threatened to deprive the general depots of the veterinary personnel the zone supply officers without exception urged the Chicago office to have the veterinarians retained. At the camps also the Veterinary Corps has made a place for itself in connection with subsistence inspection. At some of the camps the veterinary officer is known as the food inspector and so functions, while in two of the large supply depots the entire work of subsistence inspection is carried on under the supervision of the Veterinary Corps personnel.

Concerning this work, the history of the Chicago Depot during the war contains the following: "The work performed by this force (meat inspector) was of the higest order, and a glance at the procurement tables which follow will give a general idea of the amount of work performed by this important unit. That the articles furnished were properly prepared and rigidity of inspection maintained during the course of manufacture is evidenced by the fact that less than one-half of 1 per cent of the total quantity was lost by deterioration."

In a letter to the Quartermaster General of the Army dated July 15, 1919, Brigadier General A. D. Kniskern, in charge of the Packing House Products Branch, pays this tribute to the meat-inspection service: "Such comprehensive knowledge, judgment and care was used in training and directing the rapidly increasing force of meat inspectors and in the conduct of these inspections that hundreds of millions of pounds of meats were passed by them as complying with Army specifications and there was no complaint as to quality and condition."

Dr. J. I. Gibson, formerly State Veterinarian of Iowa, and Mrs. Gibson, now residing at Bloomington, Ill., announce the marriage of their daughter Maurine on February 4, to A. W. Mason, of Bloomington, Ill. Mrs. Mason, like her father, is a talented musician, and her wonderful singing has been enjoyed on numerous occasions by different veterinary associations, whose members join in wishing for them a long and happy life. After a honeymoon trip in the Southland, they will reside in Kansas City, Mo.

DURATION OF IMMUNITY AGAINST HOG] CHOLERA FOLLOWING SIMULTANEOUS INOCULATION OF YOUNG PIGS

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A NUMBER of investigators and observers have stated that in a large percentage of cases the simultaneous inoculation of young pigs does not confer a lasting immunity against hog cholera. The minimum age at which simultaneous inoculation can be successfully carried out with assurance of conferring a lasting immunity has been variously placed from weaning time up to 50 or 60 pounds in weight. In an endeavor to cast additional light on this subject, the following series of experiments was carried out:

EXPERIMENT NO. 1

A nonimmune sow, No. 7941, weighing 200 pounds, farrowed 10 pigs on August 31, 1917. On September 7, 1917, the 10 pigs, then being 7 days old, were simultaneously inoculated, each pig received 10 c.c. of anti-hog-cholera serum and ½ c.c. of hog-cholera virus. On the same date the sow was given 60 c.c. of serum and 2 c.c. of virus.

The sow and pigs apparently suffered no ill effects from the treatment, but on account of the small size of sow and the large number of pigs 6 of the pigs became runty and finally died. Postmortem revealed only a large number of worms (*Ascaris*) and emaciation.

On February 9, 1918, 5 months after immunization, the 4 surviving pigs were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

EXPERIMENT NO. 2

Two nonimmune sows, Nos. 833 and 834, weighing approximately 300 pounds each, farrowed 16 pigs, one litter October 7, 1917, and the other October 9, 1917. On October 15, 1917, the 16 pigs, then being 6 and 8 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus. On the same date each sow received 60 c.c. of serum and 2 c.c. of virus.

Three of the pigs became runty and died. Postmortem showed emaciation and a large number of worms (*Ascaris*). On January 15, 1918, 5 months and 1 week after immunization, the remaining 13

pigs, now averaging 75 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

The small size of these pigs at the time of exposure to hog cholera was due to cold weather and infestation with worms (*Ascaris*).

EXPERIMENT NO. 3

A nonimmune sow, No. 349, weighing approximately 325 pounds, farrowed 7 pigs on June 5, 1918. One pig was dead June 8, 1918. On June 12, 1918, the remaining 6 pigs, then being 7 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus. The sow on the same date was given 80 c.c. of serum and 2 c.c. of virus. On March 31, 1919, 9 months and 26 days after inoculation, the 6 pigs, now averaging 275 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

EXPERIMENT NO. 4

An immune sow, No. 0, farrowed 6 pigs on July 1, 1918. The following day 1 pig was dead. On July 8, 1918, the remaining 5 pigs, then being 7 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus. On the day of inoculation one of the pigs was suffering from an infection of the foot, which showed evidence of having become systemic in character.

On July 25, 1919, 17 days after immunization, the pig with the infected foot died. Postmortem showed cervical glands hemorrhagic, lungs hemorrhagic, spleen normal, kidneys petechial, bladder normal, cecum and colon normal.

The 4 surviving pigs continued well, and on March 31, 1919, 8 months and 23 days after immunization, the 4 pigs, now averaging 220 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus.

On April 9, 1919, one of these pigs, which will be designated B, became indisposed, showed a temperature of 105° F., continued to go about with the other hogs but refused feed, and was found dead on the morning of April 12, 1919. Postmortem showed cervical and inguinal glands congested, but no hemorrhages; lungs normal; spleen engorged; kidneys, few hemorrhages; bladder black; large and small intestines very dark, with extensive enteritis. In order to determine the presence or absence of hog cholera a piece of muscle weighing 1½ pounds was cut from the center of one ham

and fed to pig No. 121 on April 12, 1919. The latter pig remained well for a period of three weeks, and was then exposed to hog cholera by injecting with 5 c.c. of virus on May 5, 1919. The pig showed the usual high temperature, was off feed, etc., and died May 20, 1919. Postmortem showed extensive hemorrhagic lesions of hog cholera.

Pig No. 121 having remained well following the feeding of the ham muscle from pig B, and later being proved susceptible to hog cholera by virus injection, would eliminate hog cholera as the cause of death of pig B.

With the exception of pig B, all pigs of this lot remained well following the virus injection.

EXPERIMENT NO. 5

An immune sow, No. 00, farrowed 7 pigs on July 24, 1918. One pig died at time of farrowing, and there were 2 runts, which died the following day.

On August 1, 1918, the remaining 4 pigs, then being 8 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus. On March 31, 1919, 8 months after immunization, the 4 pigs, now averaging 225 pounds in weight, were each given 5 c.c. of hog-cholera virus to test immunity.

On April 4, 1919, one of the 4 pigs, which will be designated C, remained in the nest, showed temperature of 105° F., continued off feed, with high temperature, and died April 16, 1919. Postmortem showed congested cervical glands, purulent pneumonia, heart hemorrhagic, spleen enlarged, cecum and colon affected with characteristic necrotic enteritis, bladder very hemorrhagic, kidneys three times normal size, very soft, sponge-like, and small intestines hemorrhagic.

In order to determine the presence or absence of hog cholera in pig C, on the day preceding the death of this hog (April 15, 1919) 5 c.c. of blood was drawn and injected into pig No. 122. This pig remained normal for a period of 7 days (to April 22, 1919) when it showed a temperature of 107.4 and was off feed. Pig 122 continued off feed, with high temperature, for a period of 5 days, when improvement began, temperature dropped to almost normal and appetite improved. The pig was recorded as normal on May 26, 1919. Excepting poor flesh, this pig showed evidence of being normal much before being actually so recorded.

On May 27, 1919, pig 122 was exposed to hog cholera by injecting with 5 c.c. of virus. This was followed in the usual time with high

temperature, loss of appetite, conjunctivitis, weakness and diarrhea, death taking place June 9, 1919. Postmortem showed characteristic hemorrhagic lesions of hog cholera.

The susceptibility of pig No. 122 to hog cholera, which was proved by virus injection, eliminates hog cholera as the cause of illness in pig No. 122 following the injection of the blood from pig C, or of the death of pig C.

With the exception of pig C, all pigs remained well following the virus injection.

EXPERIMENT No. 6

An immune sow, No. 000, farrowed 7 pigs on August 19, 1918. On August 20, 1918, 2 pigs were found dead. On September 4, 1918, the remaining 5 pigs, then being 15 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus. On March 31, 1919, 6 months and 27 days after immunization, the 5 pigs, now averaging 215 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All 5 pigs remained well following the virus injection.

EXPERIMENT No. 7

An immune sow, X, farrowed 3 pigs on November 1, 1918. On November 8, 1918, the 3 pigs, then being 7 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus.

On May, 1919, 7 months and 12 days after immunization, the 3 pigs, now averaging 215 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

EXPERIMENT No. 8

Five immune sows farrowed 26 pigs between the evening of November 12 and the morning of November 14, 1918. On November 21, 1918, the 26 pigs, then being 7 to 9 days old, were simultaneously immunized, each pig receiving 10 c.c. of serum and ½ c.c. of virus.

On January 18, 1919, one of the pigs died. The postmortem showed a large number of worms (*Ascaris*). On May 20, 1919, 7 months after immunization, the 25 remaining pigs, now averaging 215 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

EXPERIMENT NO. 9

An immune sow, XX, farrowed 7 pigs on December 26, 1918. On January 2, 1919, the 7 pigs, then being 7 days old, were simultaneously inoculated, each pig receiving 10 c.c. of serum and ½ c.c. of virus.

On June 30, 1919, 6 months and 4 days after immunization, the 7 pigs, now averaging 140 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus.

On the morning of July 7, 1919, all 7 pigs in this lot had the appearance of having been worried, possibly by dogs, and all refused to eat, but by evening all were normal and were eating excepting one. This pig refused to eat, was still, and was found dead on the morning of July 9, 1919. Postmortem showed a large amount of blood extravasated into the tissues, about the neck and throat; cervical glands dark; lungs normal; spleen normal; kidneys, few dark spots; cecum and colon, walls thickened, and mucous surface had the appearance of beginning necrosis; bladder normal; stomach normal; serous surface of small intestines showed many small hemorrhages. The blood from this pig was not tested for hog cholera, but a diagnosis of cholera could not be made from the postmortem. The surviving 6 pigs of this lot remained well following the virus injection.

EXPERIMENT NO. 10

Sixty-four pigs farrowed by immune sows on farm of Mr. D. were simultaneously inoculated July 9, 1918, the pigs then being 3 to 6 weeks of age, and weights ranging from 10 to 25 pounds. The dosage ranged from 15 c.c. of serum for the smaller to 20 c.c. for the larger pigs, each pig receiving ½ c.c. of virus.

On September 22, 1918, one of the pigs was found dead; history of recent castration.

On December 23, 1918, five and one-half months after immunization, 6 of these pigs, now averaging 100 pounds in weight, were transferred to the Bureau Station and exposed to hog cholera by injecting each with 5 c.c. of virus. Following this exposure all pigs remained normal.

On January 11, 1919, 6 months after immunization, the remaining 57 pigs, now averaging 110 pounds in weight, were exposed to hog cholera, on Mr. D.'s farm, by injecting each with 2 c.c. of hog-cholera virus. All pigs remained well following the virus injection.

EXPERIMENT NO. 11

Forty-one pigs farrowed by nonimmune sows on the farm of Mr. H. were simultaneously inoculated July 20, 1918. Each pig received 20 c.c. of serum and ¾ c.c. of virus. The mothers of these pigs were also simultaneously inoculated on the same date, each receiving 60 c.c. of serum and 2 c.c. of virus. The pigs ranged in weight from 10 to 20 pounds and were from 3 to 5 weeks of age at the time of inoculation.

Two pigs of this lot died and one pig was sold during the interval between the time of inoculation and exposure to hog cholera.

On February 20, 1919, 7 months after immunization, the 38 pigs, now averaging 120 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

EXPERIMENT NO. 12

Six pigs farrowed by a nonimmune sow on the farm of Mr. C. were simultaneously inoculated July 20, 1918. Each pig received 20 c.c. of serum and ¾ c.c. of virus. The mother of these pigs was simultaneously inoculated on the same date, receiving 60 c. c. of serum and 2 c.c. of virus. The weights of these 6 pigs ranged from 10 to 15 pounds and the pigs were about 4 weeks old at time of inoculation. On January 27, 1919, 6 months and 1 week after inoculation, the 6 pigs, now averaging 125 pounds in weight, were exposed to hog cholera by injecting each with 5 c.c. of virus. All pigs remained well following the virus injection.

SUMMARY AND CONCLUSIONS

All pigs used in the first 9 experiments were farrowed on the Bureau Station grounds at Ames, Iowa, and during the interval between farrowing and exposure were held in small pastures on that part of the premises, as far from the buildings and experimental pens as possible. Drainage was, for the most part, away from the pasture; the feeder and caretaker did not work with virus, about cholera pigs, or the buildings where virus is handled. Every precaution was taken to prevent exposure of the pigs to cholera before the proper interval had elapsed between immunization and exposure to virus.

In the last 3 experiments, carried out on farms in the vicinity of Ames, Iowa, the pigs had the usual range of pastures, hog lots and sheds found on the farms. Hog cholera did not exist on any farms

in the community, consequently we believe no exposure occurred between the time of immunization and the time of exposure by virus injection.

There were no apparent ill effects from the simultaneous inoculation in any of the pigs or the nonimmune sows used in the foregoing experiments.

The serum was injected in equal amounts into the two inguinal and axillary spaces of each pig, the virus being injected into the ham.

The 171 pigs inoculated on the station premises and on farms when 7 days to 6 weeks old, and exposed to hog cholera 5 months to 9 months and 26 days later, were found without exception to be immune to hog cholera. Three pigs of this number, however, died during the period of exposure from causes other than cholera.

There was no difference in the immunity in pigs from immune and nonimmune sows.

These experiments, although few in number, indicate that the simultaneous inoculation of young pigs confers a lasting immunity.

BIBLIOGRAPHY

COLE, C. G. Statistics on the Use of Anti-Hog-Cholera Serum and Virus. American Journal of Veterinary Medicine, Vol. 13, p. 173.

CAHILL, E. A. Hog Cholera Control in the East. Journal of the American Veterinary Medical Association, January, 1919.

BIRCH, R. R. Observations in regard to Immunizing Young Pigs. The Cornell Veterinarian, April, 1919.

Dr. H. L. Darby, who is the veterinary adviser for the firm of Sherwin-Williams Co., has just returned from a six months' trip through Brazil, Uruguay and Argentina, where he made a study of the markets for dips, disinfectants and insecticides for plants. He called on the principal veterinary officials of the countries visited, and a lively interest was manifested by them in the veterinary activities of the United States. Dr. Darby is planning to leave about May 1 on another extended trip, embracing the West Indies, Central America, Venezuela and Colombia, in the interest of his company.

Dr. and Mrs. A. G. Alverson, of Bloomington, Ill., are spending the winter in California.

STUDIES ON ANTHELMINTICS

VIII—Some Experiments with Fluid Extracts

By MAURICE C. HALL

Parasitologist,[1] *Research Laboratory, Parke, Davis & Co., Detroit, Mich.*

IN a previous paper (Hall, 1918) the writer has made the following statements in regard to fluid extracts as anthelmintics:

"Fluid extracts or other preparations using alcohol as a solvent for active anthelmintic ingredients are frequently unsuitable as anthelmintics.

"Experiments in this laboratory on a number of such preparations indicate that there are good objections to some of these preparations. In the first place, the very fact that alcoholic preparations are adapted to the production of rapid systemic effect—the effects one wishes to avoid in using the characteristically toxic group of drugs known as anthelmintics—is one reason why they are unsuitable as anthelmintics. These alcoholic preparations are often rapidly absorbed, largely in the stomach and duodenum, occasioning more or less irritation at the point of absorption and producing systemic effects of a more or less toxic nature. The considerable and rapid absorption leaves a comparatively small amount of drug available for actual anthelmintic action, and by the same token leaves the minimum of drug that could possibly be removed by purgation after exerting its anthelmintic effect. In the writer's opinion, some alcoholic preparations of anthelmintics are distinctly dangerous to the host animal and relatively ineffective against parasites, and this opinion is substantiated by quite a number of experiments in this laboratory."

The object of this paper is to detail some of these experiments on fluid extracts as anthelmintics.

The fluid extracts tested were those of kamala, chenopodium, balsam poplar buds (balm of Gilead), caulophyllum (blue cohosh), and spigelia (pink root).

Kamala in powder form is well known as a very satisfactory tæniafuge and is one of the two remedies used in removing the common liver fluke from sheep. Tests of the fluid extract were made with 3 dogs as follows:

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[1] Resigned March 27, 1919.

Dog No.	Weight	Dose	In Water	Worms Passed				Worms Postmortem				Digestive Tract
				Ascaris	Hookworms	Whipworms	Tapeworms	Ascaris	Hookworms	Whipworms	Tapeworms	
	Kilos	Mils	Mils									
24	7.5	8	24	1	0	0	2	0	2	2	2	Normal
48	11	8	24	0	0	0	0	0	1	0	37	Normal
206	9	16	None	0	0	0	0	2	0	0	10	Gastric hemorrhage

The treatment removed 1 of 3 ascarids (33 per cent), none of 3 hookworms (0 per cent), none of 2 whipworms (0 per cent), and 2 of 49 tapeworms (4 per cent). This result is sufficiently inferior to the results we can depend on attaining with other drugs to warrant the belief that this preparation can not be regarded as a valuable anthelmintic.

In small doses (8 mils) the drug was uninjurious to the digestive tract, but in larger dose (16 mils) postmortem examination showed hemorrhages in the stomach.

Chenopodium in the form of oil of chenopodium is the most valuable all-around anthelmintic that we know of, being the best for use in single-dose treatment against ascarids and giving better results in three doses at hour intervals for removal of hookworms than thymol in therapeutic dose gives. Tests of the fluid extract were made with 3 dogs as follows:

Dog No.	Weight	Dose	In Water	Worms Passed				Worms Postmortem				Digestive Tract
				Ascaris	Hookworms	Whipworms	Tapeworms	Ascaris	Hookworms	Whipworms	Tapeworms	
	Kilos	Mils										
55	18	4	12 mils 01. ric. 30 mils	1	0	0	0	3	0	33	80	Inflamed
56	14	4	12 mils 01. ric. 30 mils	0	0	0	0	22	1	0	19	Inflamed
59	4	2	6 mils 01. ric. 20 mils	0	0	0	0	1	1	1	0	Gastric hemorrhage

The treatment removed 1 ascarid out of 27 (4 per cent) and none out of 2 hookworms, 34 whipworms, and 99 tapeworms (0 per cent). In view of the high anthelmintic efficacy of oil of chenopodium, there would appear to be no reason for using a fluid extract which shows so little efficacy as an anthelmintic.

In all cases the digestive tract was inflamed or showed gastric hemorrhage, as would be expected from the fluid extract of chenopodium, since we know that the oil of chenopodium acts as a gastro-intestinal irritant, and alcohol would probably increase the rate of absorption.

The fluid extract of balsam poplar buds was tested as follows:

Dog No.	Weight	Dose	In Water	Worms Passed				Worms Postmortem				Digestive Tract
				Ascaris	Hookworms	Whipworms	Tapeworms	Ascaris	Hookworms	Whipworms	Tapeworms	
	Kilos	Mils										
174	13.5	4	30 mils	0	0	0	0	0	0	0	0	Normal
179	12	4	None	0	0	0	0	10	0	8	0	Normal
176	11.5	10	None	55 or 18	0	0	0	0	0	0	0	Normal

Dog No. 176 and another dog in a different experiment escaped from their cages on one occasion, making it impossible to say which one passed a number of worms that were found outside of the cages, hence the two figures given for ascarids passed. However, the experiment shows that in doses of 10 mils, undiluted, the fluid extract of balsam poplar buds is 100 per cent effective against ascarids, whereas in doses of 4 mils, undiluted, it is 0 per cent effective against ascarids.

The digestive tracts were normal in all 3 dogs. It should be said in comment that the fluid extract of balsam poplar buds contains a large amount of difficultly soluble material, oleoresins and resins, which material is promptly thrown out of solution on the addition of a small amount of water or on contact with the buccal mucosa. This comparative insolubility probably accounts for the fact that the drug causes no injury to the digestive tract and also for the necessity for large doses.

The following tests were complicated in a way that makes tabulation unsatisfactory, so they are given in detail.

Dog No. 105, weighing 7.5 kilos, was given 7.5 mils of fluid extract of spigelia and senna in 15 mils of water. The next day the dog passed 1 ascarid. No more worms were passed until the fourteenth day, when 5 ascarids were passed. While the passage of these worms at this late date might be partly due to toxic effects of the anthelmintic, which weakened the worms in the first instance,

the connection is too uncertain and too tenuous. Ordinarily our experiment animals are killed on the fourth day, as our findings (Hall, 1918) show that about 98 per cent of the worms passed by dogs after an anthelmintic come away in the first 4 days after treatment, the remaining 2 per cent coming away on the fifth to the seventh day. It is undeniable that an anthelmintic might weaken a worm to the point where it would succumb to unfavorable conditions 2 weeks later, but such action must be disregarded in a consideration of anthelmintics. To merit consideration as an anthelmintic in experiments on dogs, a drug must furnish of itself such unfavorable effects on worms as to bring them away within a week, and the big majority of worms, in fact, actually do come away from dogs within the first 24 hours after the administration of the anthelmintic. In the case of dog No. 105, the animal had 45 ascarids and 10 *Dipylidium* postmortem, showing an efficacy of 2 per cent against ascarids and 0 per cent against *Dipylidium*. The digestive tract showed a moderate degree of inflammation.

Dog No. 170, weighing 4.5 kilos, was given 1 mil of fluid extract of caulophyllum (blue cohosh) in 3 mils of water. During the next 5 days the dog passed 5 ascarids. On the fifth day the dog was given 4 mils of fluid extract of balsam poplar buds in 12 mils of water. The dog was dead the next morning. Postmortem examination showed 64 ascarids in the large intestine and cecum. These must be credited to the anthelmintic action of the balsam poplar buds, and the number would presumably have been greater if the dog had not died too soon after treatment to permit the anthelmintic to display its total efficacy. However, this dog still had in the small intestine 1,985 ascarids, most of them very young worms, and 1 hookworm. There was some inflammation and hemorrhage in the digestive tract. The early death of the dog and the other complications here make it difficult to draw conclusions.

SUMMARY

The low tæniacidal value of fluid extract of kamala as compared with the high tæniacidal value of powdered kamala, and the low ascaricidal value of fluid extract of chenopodium as compared with the high ascaricidal value of oil of chenopodium, bear out the statement that fluid extracts are frequently unsuitable as anthelmintics. Fluid extract of spigelia and senna promises little of value as an anthelmintic, and this is in agreement with Foster's findings, published by Hall and Foster (1918). Fluid extract of balsam poplar

buds may prove to be effective against ascarids, and uninjurious, when taken in large doses, but large doses of this drug, with the precipitation of the resinous content on the buccal mucosa, are resented by dogs and would not be very attractive to man. Fluid extract of caulophyllum did not receive sufficient test to draw conclusions on, but in the dose used it was not very effective.

REFERENCES

HALL, MAURICE C. 1918. A discussion of some principles of anthelmintic medication. N. Orleans M. & Surg. J., v. 70 (8), Feb., pp. 637-653.

HALL, MAURICE C., & WINTHROP D. FOSTER. 1918. Efficacy of some anthelmintics. J. Agric. Research, v. 12 (7), Feb. 18, pp. 397-447.

AN appropriation has been made by Congress to enable Dr. E. W. Nelson, Chief of the Biological Survey, Department of Agriculture, to build up the reindeer industry in Alaska. A chief veterinarian trained in animal husbandry is needed to take charge of the investigation of diseases and parasites among reindeer and developing methods of combating them, as well as to supervise experiments for grading up the reindeer herd in order to increase the quality and meat production of these animals. There are now 160,000 reindeer in Alaska and it is estimated by reindeer owners that the coming calf crop this spring will increase the number to 200,000. This industry in Alaska has great future possibilities and the veterinarian in charge of the work will have a large field to develop and an opportunity to perform a valuable service in developing the resources of Alaska, as well as materially adding to the meat supply of the Nation. It has been estimated that the grazing capacity of Alaska will maintain more than ten million reindeer. This is an interesting field for an ambitious and competent young man under 40 years of age, with energy and initiative. The position will pay up to $3,000 a year to begin with and subsistence and other traveling expenses when away from the official station.

Dr. H. Jensen, of the Jensen-Salsbery Co., Kansas City, Mo., was a recent visitor to Washington, D. C., during the Easter season, renewing old friendships and looking for the latest ideas along biological and pharmaceutical lines.

ABSTRACTS

FOOT-AND-MOUTH DISEASE: TRANSMISSIBILITY TO MAN. Di Pace. Policlinico, Aug. 31, 1919. Abstract in American Medicine, Feb., 1920.

THE author cites evidence from various countries to show that the aphthous fever of cattle can be transmitted to man, but that contagion occurs comparatively rarely. Milk from infected animals is the source of the greatest danger. A trace of fluid from one of the vesicles is enough to contaminate a large amount of milk; one cow with the disease can infect the milk from the whole dairy. But there is no evidence that the virus invades the muscle tissue, and there need be no fear of harm in eating the meat, provided the animal is slaughtered and eviscerated at once and the meat is well cooked. Unless these two conditions can be fulfilled the meat should not be used, as toxins resistant to heat may spread to the muscle tissue under other conditions. He quotes Prof. Mazzine to the effect that the soldiers in the Turin district have been fed on meat from cattle with epizootic aphthæ, and that he used it in his own family without the slightest disturbance therefrom.

THE EFFICACY OF NORMAL SERUMS IN ANTHRAX INFECTION. Hutyra and Manninger. Centbl. Bakt. etc., I Abt. Orig. Bd. 83, Hft. 7, p. 518-519.

In experiments conducted by the authors, sera from normal horse, cattle and sheep failed to protect young rabbits against subcutaneous injections of virulent anthrax culture. Control animals receiving immune sera from horse and cow withstood the anthrax infection. The fact that occasionally normal sera have protective and curative action is explained on the ground that such sera come from animals which have previously been subjected to one or more light natural infections. It is known that animals while at pasture on infected meadows take up with the grass and drinking water large quantities of anthrax spores without manifesting any visible symptoms of sickness. Such latent infections can, nevertheless, cause the formation of antibodies leading to a certain degree of immunity of the affected animal.

The authors, who performed their experiments in Europe, suggest that in more badly infected regions, such as Argentina, the above phenomenon should occur more frequently. L. T. GILTNER.

GENERALIZED CANCER OF THE PANCREAS IN A HORSE, WITH PERFORATION OF THE STOMACH. Veterinarian Quentin. Rec. Méd. Vét., vol. 95, pp. 290-296, 1919.

The extreme rarity of cancer of the pancreas in the horse (contrary to its comparatively frequent occurrence in man), the curious stomach lesions and the peculiar clinical course of this case have led to its description.

Clinical examination—A fifteen-year-old gelding was brought in to be treated for colic. The animal had voided a large quantity of blood from the mouth and nose; blood was red, aerated. Head was held down, pawing and striking the ground with his forelimbs, rolled about several times with violence, and finally there was complete lateral decubitus. The end of the patient seemed near. Temperature reached 40.3 (104 F.). Conjunctiva pale. Pulse imperceptible; extremities cold. Animal refused to get up.

Injected 20 centigrams (0.02 gram) morphin hydrochlorid and applied refrigeration to the thorax. Fifteen minutes later the animal got up unassisted; gait, normal. Remained standing for ¾ hour without outward signs of pain or hemorrhage. Then, inside of a few minutes, violent colic developed. He threw himself from side to side with remarkable speed, sometimes he remained on his back, his legs violently kicking the air. He rose suddenly and tried to support himself in a corner of his stall; forelimbs were under the trunk. He looked at and tried to bite the anterior face of the sternum. No tympany. Frequently the sitting position was taken; sitting on his haunches like a dog.

Indigestion and intestinal obstructions are easily eliminated; it is impossible, however, to locate a lesion definitely. Two days after arrival, the animal is apathetic, inferior face of sternum traumatized due to frequent bites; no tympany. Pressure on the 8th, 9th and 10th intercostal spaces at the union of the median and superior thirds of the chest caused marked pain and defensive reactions. Toward evening the dejection of the animal increased; kept eyes closed, was insensible to external stimuli; skin and extremities cold. Pulse, small, arythmic, 90. Temperature, 38.8. Death followed.

Autopsy: Cadaver not bloated. Most striking find was: Pancreas was replaced by an enormous cancerous mass, adhesions to stomach on right side; stomach perforated.

(Note by Abstractor.—The author's inability to locate definitely the lesion after most painstaking examination is easily understood, first, because of the rarity of the disease, and second, lack of litera-

ture on the subject. Hutyra and Marek's Pathology and Therapeutics of the Diseases of Domestic Animals contains not quite three pages on diseases of the pancreas!) W. N. BERG.

TREMBLES IN SHEEP. M. L. Bigoteau. Rev. Gén. Méd. Vét., Aug. 15, 1919, p. 433.

The author believes that this disease is one of the various manifestations of infection with the bacillus of Preisz-Nocard, basing his convictions on long observations which showed that trembles is always encountered in infected bands. It disappears from bands when there is rigid prophylaxis against infection by the Preisz-Nocard bacillus.

Observations on two cases are reported. In a band of ewes trembles made its appearance. Some years before Preisz-Nocard infection was diagnosed. The disease affected animals of the same lambing, aged two to three years. It develops slowly. Autopsies on sick animals that were slaughtered showed in every case lesions caused by the Preisz-Nocard bacillus. The disease was introduced by males from another band.

In another band of well conditioned sheep but in which Preisz-Nocard infection was present, trembles appeared. As in the preceding case the disease affected only animals of the same lambing, aged from 20 to 25 months. Autopsies revealed caseous lesions in some of the tissues. For the introducion of the disease into this band the males were also incriminated. L. T. GILTNER.

Dr. S. L. Stewart formerly of the Kansas City Veterinary College and for the past two years Professor of Anatomy in the Chicago Veterinary College, will locate in Champaign, Illinois, for practice about April 1st.

Mr. B. D. McCabe, an old and trusted employe of the Bureau of Animal Industry, for a number of years assigned as agent in scabies eradication under the supervision of Dr. F. E. Murray, Salt Lake City, Utah, died March 2. Mr. McCabe was the father of George P. McCabe, who was Solicitor of the Department of Agriculture from 1905 to 1913.

Dr. Bert J. Cady, B. A. I. Inspector, is in charge of hog cholera control work in the State of New York with headquarters at Ithaca, N. Y.

ARMY VETERINARY SERVICE

NEWS FROM THE SURGEON GENERAL'S OFFICE

THE following orders of transfer and reassignment have been issued for veterinary officers:

1. Major A. Mitchell, V. C., from Camp Funston Remount Depot, Kan., to Louisville, Ky., for duty as Purchasing Zone Veterinarian for Eastern Purchasing Zone for public animals.

2. Major Charles H. Jewell, V. C., from duty in the Veterinary Division, Surgeon General's Office, Washington, D. C., to Fort Riley, Kan., for duty as Post Veterinarian and as Officer in Charge of Veterinary Instruction in the Cavalry School, Fort Riley.

3. Major B. A. Seeley, V. C., from Remount Depot, Camp Meade, Md., to Chicago, Ill., for instruction in meat inspection.

1. Captain J. W. Crouse, V. C., from Chicago, Ill., to Remount Depot, Camp Pike, Ark., for duty as The Veterinarian.

2. Captain K. F. Hinckley, V. C., from Chicago, Ill., to Fort Myer, Va., for duty as Post Veterinarian.

3. Captain H. S. Eakins, V. C., from Veterinary Division, Surgeon General's Office, Washington, D. C., to Chicago, Ill., for duty.

4. Captain C. L. Miller, V. C., from 4th Division, Camp Dodge, Iowa, to Camp Funston, Kan., for duty as The Veterinarian, R. D., that Camp.

5. Captain H. Clarke, V. C., from duty in the Veterinary Division, S. G. O., Washington, D. C., to Fort Jay, N. Y., for duty as Post Veterinarian.

6. Captain William H. Dean, V. C., from Fort Jay, N. Y., to Camp Jackson, S. C., for duty as Camp Veterinarian.

7. Captain C. M. Gilchrist, V. C., from duty with 1st Division, Camp Taylor, Ky., to Remount Depot, Camp Taylor, Ky., for duty as The Veterinarian.

8. Captain W. A. Sproule, V. C., from Remount Depot, Camp Taylor, Ky., to 1st Division, Camp Taylor, Ky., for duty as Division and Camp Veterinarian and Veterinarian Instructor in the Field Artillery Basic School, that Camp.

9. Captain J. R. Mahaffy, V. C., from Remount Depot, Fort Bliss, Texas, to Chicago, Ill., for instruction in meat inspection.

10. Captain F. B. Gage, V. C., from Camp Lewis, Wash., to Chicago, Ill., for instruction in meat inspection.

11. Captain C. S. Parker, V. C., from 4th Division, Camp Dodge, Iowa, to Chicago, Ill., for instruction in meat inspection.

1. 1st Lieut. J. G. Catlett, V. C., from Remount Depot, Fort Keogh, Mont., to Louisville, Ky., for duty with the Eastern Purchasing Zone Officer for public animals.

2. 1st Lieut. G. L. Caldwell, V. C., from Chicago, Ill., to Honolulu, Hawaiian Islands, for duty.

3. 1st Lieut. E. L. Jarvis, V. C., from Front Royal, Va., to Louisville, Ky., for duty with the Eastern Purchasing Zone Officer for public animals.

4. 1st Lieut. R. M. Buffington, V. C., from 1st Division, Camp Taylor, Ky., to Chicago, Ill., for instruction in meat inspection.

5. 1st Lieut. F. B. Croll, V. C., from Kansas City, Mo., to Fort Bliss, Texas, for duty at Remount Depot, that Post.

6. 1st Lieut. A. H. Chamberlin, V. C., from Remount Depot, Camp Travis, Texas, to 4th Division, Camp Dodge, Ia., for duty.

7. 1st Lieut. C. L. Nelson, V. C., from Remount Depot, Camp Travis, Tex., to 4th Division, Camp Dodge, Iowa, for duty.

8. 1st Lieut. J. W. Graham, V. C., from Remount Depot, Camp Meade, Md., to Remount Depot, Camp Lee, Va., for duty.

9. 1st Lieut. J. P. Gerety, V. C., from Remount Depot, Camp Lee, Va., to Fort Clark, Texas, for duty as Assistant to the Post Veterinarian.

1. 2nd Lieut. O. W. Anderson, V. C., from Camp Sherman, Ohio, to Fort Monroe, Va., for duty as Post Veterinarian.

2. 2nd Lieut. J. W. Timmons, Jr., V. C., recently arrived in this country from Coblenz, Germany, to Chicago, Ill., for instruction in meat inspection.

DIRECTOR OF VETERINARY CORPS AWARDED DISTINGUISHED SERVICE MEDAL

BY direction of the President, under the provisions of the Act of Congress approved July 9, 1918, a Distinguished Service Medal has been awarded Col. Charles F. Morse, Director of Veterinary Corps for exceptionally meritorious and distinguished service based on the following citation:

"As Director of the Veterinary Corps, by displaying exceptional energy, zeal, and good judgment he organized and administered with marked success a veterinary service capable of meeting every need in home territory and in the theatre of operations. He provided effective means for the treatment of sick and wounded animals, for the prevention of disease among well animals, for the inspection of meat and dairy products used by the Army, and through the establishment of schools of instruction placed the personnel of the Veterinary Corps of the Army on a high plane of efficiency."

The Surgeon General in recommending this award states:

"This officer was largely instrumental in building up a veterinary service during the war from practically nothing to 2,180 officers and 20,000 enlisted men and upon him devolved the care and treatment of the sick and wounded arising among 465,000 animals. Aside from the obligations to be met in home territory he was responsible for the organization and dispatch overseas of all veterinary personnel and material required there. Believing that suitable recognition

should be accorded the officer in home territory who not only made the overseas achievements possible but also successfully overcame a task of great magnitude here, and as final evidence of appreciation of the splendid services rendered by the veterinary profession of America during the World War, I recommend that this paper be given earnest and favorable consideration."

It is impossible for the undersigned to express adequate appreciation of the great honor conferred by this award. What seems of far greater importance than any personal consideration is the high compliment thereby paid the personnel of the Veterinary Corps and the veterinary profession of America. While I may have played a humble part in placing "the personnel of the Veterinary Corps of the Army on a high plane of efficiency," no one knows better than I how essential to the attainment of this object have been the wholehearted enthusiasm, the faithful attention to duty and the intelligent, well directed efforts on the part of my colleagues in this office and of the veterinary officers of the Army at large which have been constantly in evidence. No one realizes more acutely the discouragements encountered and the obstacles overcome both in this country and in France by officers of the Veterinary Corps through the exhibition of these qualities. The sacrifices made by the civilian veterinarians were equal to those made by men in other walks of professional life and are deserving of the same high commendation. Our enlisted men as a body were of splendid type and while not veterinarians themselves rendered services of vital importance to success. If the patients with whom they labored faithfully could but speak, no other praise would be needed.

No one man made the Veterinary Corps any more than one man can hold it up to its high standard. Each individual participating in this achievement is deserving of credit for his share and it should be a matter of lasting pride to him that the result has been deemed worthy of official recognition. It is with the utmost satisfaction that I avail myself of this opportunity to congratulate every man of the veterinary service on having had the privilege of writing his few lines in that magnificent chapter of the history of the veterinary profession of America, the Army veterinary service of the World War.

C. F. MORSE,
Colonel, Medical Corps,
Director, Veterinary Corps.

ARMY REORGANIZATION

THE Army Reorganization Bill was recently passed by the House of Representatives. There was no material change made in the text of the bill on the floor of the House as it was considered section by section.

The Medical Department, section 10 was considered and agreed to without any comment as regards the Veterinary Corps. This section provides "The Veterinary Corps shall consist of 140 officers in grades from colonel to second lieutenant, inclusive." The Army as authorized by this bill will consist of 299,000 enlisted men and about 17,720 officers. For an army of this size with its organizations of infantry, cavalry, field artillery, machine guns, etc., it will require a minimum of 347 officers to do the work necessary for a veterinary service as now organized in the Medical Department and not less than 2,500 enlisted men.

The Senate having disposed of the peace treaty has now passed the reorganization bill reported by the Senate military committee. This measure was passed on April 20 as a substitute measure for the bill considered by the House. In the Senate Army Bill provision is made for 200 veterinary officers from grade of colonel to that of second lieutenant and 1,500 enlisted men.

It is hoped that when these two bills are sent to conference where the army reorganization measure will be drafted that will define the military policy of the country for the immediate future the veterinary profession will be able to impress upon the conferees the necessity of providing adequate veterinary service to take care of the army animals and meat and dairy inspection to the end that they will authorize not less than 200 permanent officers for the corps and at least 2,000 enlisted men.

SECOND LIEUTENANTS, R. C.

To the Editor:

I would like to voice my protest against veterinarians accepting commissions as Second Lieutenants in the Veterinary Section of the Officers' Reserve Corps.

Dentists and physicians are receiving commissions as First Lieutenants and I see no reason why the veterinarians should take the rear seat and be started at the lower step of Second Lieutenants.

Of course the claim will be advanced that it will cause considerable embarrassment when the Reserve Officers are mobilized for training each year, and a regular Army Veterinarian, ranking Second

Lieutenant, is present. Very well, his embarassment may be just as painful if there is one First Lieutenant, R. C. Veterinary Section, as if they were all Firsts. What is the weight of that argument?

In case the Reserve Corps is mobilized for war, the regular Army Veterinarian, ranking Second Lieutenant, may be advanced several grades to take care of the matter, for the reason that he is the better trained soldier. Seniority is governed by the date of call into active service and not from date of commission. As it now stands the regular Army Veterinarian may be placed where he will be ranked by an under-trained Captain, V. S. R. C. Will the pain be less acute than if he were ranked by a First Lieutenant, V. S. R. C.? Besides if we are to be mobilized for training annually, in all probability the officers in charge of the training will be of higher rank.

It only requires a firm stand by the veterinarians to secure this recognition. If we are to make any decided stand for advancement of the profession in America, this would be a most important step in that direction.

The American Veterinary Medical Association can get this well deserved concession if we will come out flat-footed and stand pat.

Carrizozo, N. M. CARL E. FREEMAN.

NECROLOGY

Dr. J. M. Kaylor of Barry, Ill., died February 27, 1920. Dr. Kaylor was a graduate of the Chicago Veterinary College of 1893. During the past three years he has been Assistant State Veterinarian. He has been a member of the American Veterinary Medical Association for the last few years.

B. A. I. RESIGNATIONS

During the five months ending March 15, 1920, 104 veterinarians resigned from the service of the Bureau of Animal Industry. In 17 instances the reason given was to engage in private practice. No reason was given in 36 cases. In most of the other instances, however, the reason for resignation was to enter a position with higher salary, although some veterinarians left the service on account of ill health, either of themselves or their families.

Dr. Harry E. Pinkerton, Sioux City, Iowa, in charge of virus-serum control work, after a service in the Bureau of Animal Industry of nearly fifteen years, has resigned to accept a position with the Fort Dodge Serum Company at an increased salary.

ASSOCIATION NEWS

Proceedings of the Fifty-Sixth Annual Meeting of the American Veterinary Medical Association

Held at the Hotel Grunewald, New Orleans, La., November 17 to 22, 1919

(*Continued from the April number*)

THURSDAY MORNING, NOVEMBER 20, 1919

SECTION ON SANITARY SCIENCE AND POLICE

The meeting was called to order at 9 a. m. by Dr. L. E. Day, chairman, who announced that the session would be devoted to topics of interest to Bureau of Animal Industry veterinarians.

PRESENTATION OF PAPERS

THE CHAIRMAN: The first paper on the program is one by Dr. V. A. Moore entitled "Retrospection and Fraternity from the Standpoint of a Former Employe of the Bureau of Animal Industry."

(Dr. Moore made an address which will appear in a later issue of the JOURNAL.)

THE CHAIRMAN: Gentlemen, I don't believe that this address of Dr. Moore is one that really needs any discussion, but if there are any of you that have any questions you would like to ask him, I think he would be glad to answer them. I personally feel that we owe a debt of gratitude to Dr. Moore for this splendid address he has given us, and I also want to assure Dr. Moore that we are glad to hear him say that the meat inspection of the United States is the best in the world. What has made it best? Simply because we have been following something along the lines of the suggestion that Dr. Moore has made, and that is, that every man wants to be the very best in his particular department; he doesn't want to have anybody ahead of him, and he also gives the best energy that he has to give and that is what has made the meat inspection service of the United States a service that Dr. Moore can come and tell you is the best in the world.

If there are no questions that you care to ask Dr. Moore, I will call upon the next speaker on the program, Dr. John R. Mohler, the Chief of the Bureau of Animal Industry.

DR. J. R. MOHLER: Mr. Chairman and Gentlemen, when our genial Secretary wrote me and asked me to take part in this program I decided that the subject that most needed discussion was foot-and-mouth disease, and I chose that subject for three reasons: (1) The work that the Bureau has accomplished in the eradication of this disease was one of its greatest achievements. (2) Foot-and-mouth disease has never appeared in this region of the country, and I

thought it would be interesting to the veterinarians of this section. (3) Because in the last six months there have been very extensive outbreaks of foot-and-mouth disease in South America, also in Italy, Switzerland, the southern part of France where it is epizootic, and in some other sections. I recently saw a letter from Sir Stewart Stockman of London, in which he says they were having sporadic outbreaks in England; so I felt that, now that the time is coming when the anniversary of the last three outbreaks in this country is about to occur, we should take even more interest in this disease than we have in the last three or four years.

(Dr. Mohler's paper, "Importance of Preparedness in Meeting Future Outbreaks of Foot-and-Mouth Disease," will appear in a later issue of the JOURNAL.)

THE CHAIRMAN: Gentlemen, Dr. Mohler's paper is now open for discussion if you wish to discuss it.

The next paper on the program is by Dr. T. E. Munce, on "Malignant Catarrhal Fever."

(Dr. Munce read his paper, which appeared in the JOURNAL for March, 1920.)

THE CHAIRMAN: Gentlemen, you have heard this valuable paper. It is now open for discussion.

There being no discussion, the next paper is by Dr. J. A. Kiernan, on "Tuberculosis Eradication."

(Dr. Kiernan read his paper, which will appear in a later issue of the JOURNAL.)

THE CHAIRMAN: Gentlemen, you have heard this paper by Dr. Kiernan. Are there any remarks?

DR. J. F. WINCHESTER (Lawrence, Mass.): Mr. Chairman, no one in this audience has more respect for the statements of Dr. Kiernan than I. He is right. I just want to go on record in stating that in 1887, as a Commissioner of the State of Massachusetts, in a minority report I listed the production of tuberculous animals as dangerous to man. You will find that in the agricultural report of Massachusetts for 1888. In 1908 I attended the conference at Washington of the International Congress on Tuberculosis, and I was upstairs hidden away with the crowd when they all agreed that there was a possibility of the transmissibility of tuberculosis from animal to man. I put this matter in the archives of the Association because, being hidden away in the agricultural report in the State of Massachusetts, where there is so little agriculture done in comparison to other States, they failed to pick it out. If you look up the history of TB in Massachusetts you will find the most chaotic mass of tuberculosis that you ever saw, and the last thing that stung me to death was testing a cow three times within 30 days with tuberculin test, and yet it was ordered released. (Laughter.)

THE CHAIRMAN: The next paper on the program is "Additional Observations on Tuberculin Testing," by Dr. W. H. Turner.

(Dr. Turner read his paper, showing and explaining charts. It was published in the JOURNAL for April, 1920.)

THE CHAIRMAN: Gentlemen, this excellent paper of Dr. Turner is open for discussion. Does anyone wish to discuss it?

There being no discussion, Dr. Cambon asks that I move him in front of the program. I will now call on Dr. Cambon for his paper.

(Dr. Cambon read his paper on "The Sanitary Production and Handling of Milk," which appeared in the JOURNAL for March, 1920.)

THE CHAIRMAN: Gentlemen, our next paper is by Dr. R. W. Tuck, on "Meat Inspection and Its Value as a Safeguard to Public Health."

(Dr. Tuck read his paper, which will appear in a later issue of the JOURNAL.)

ELECTION OF SECTION OFFICERS

THE CHAIRMAN: You have heard this paper and also the one preceding it. Is there any discussion? If there is no discussion, we will proceed at once to the election of the officers for the coming year and then adjourn. Who is your choice, gentlemen, for chairman of this section?

DR. TURNER: I move that Dr. Day be nominated for chairman.

(The motion was seconded.)

DR. MURPHY: I would like to move that the Secretary be authorized to cast one ballot for chairman.

(The motion was seconded and carried unanimously.)

THE SECRETARY: In accordance with the wishes of the Association, I hereby cast the unanimous ballot for L. E. Day as chairman for the ensuing year.

THE CHAIRMAN: For the office of secretary whom have you in mind?

DR. WM. HERBERT LOWE: Mr. Chairman, I take pleasure in nominating Dr. Preston Hoskins for secretary.

(The motion was seconded by Dr. Kiernan.)

DR. MURPHY: I would like to nominate Dr. C. P. Fitch of Minnesota.

(Dr. Fitch declined the nomination.)

(It was moved, seconded and carried that the nominations be closed.)

THE CHAIRMAN: I presume that that really elects Dr. Hoskins, as he was the only one.

Adjournment.

SECTION ON GENERAL PRACTICE

The meeting was called to order at 9:45 a. m. by Dr. A. S. Cooley, chairman of the section.

THE CHAIRMAN: Gentlemen, I shall detain you for only a few moments. As chairman of this section I selected a number of papers for the section, but it has been seen fit to transfer them to other sections, so that I am left with only one, and the reader of that, as well as of the others, is absent. This morning, after running up and

down stairs for about three quarters of an hour, I found that this condition existed.

The first paper that was selected was one to be read by Dr. H. A. Trippeer of Walla Walla, Wash., but as stated before he is absent. The next one is a paper by Dr. L. C. Kigin of Lafayette, Ind., but he is also absent. Dr. Turner and Dr. Munce, who were to have read papers, have been transferred to the Section on Sanitary Science and Police. Dr. Goldberg of Ithaca, N. Y., was to have given us some illustrations on "The Occurrence of Epithelial Tumors in Domesticated Animals."

(Dr. Trippeer's paper on "Impaction in the Horse" appeared in the JOURNAL for February, 1920. Dr. Kigin's paper appears in this issue.)

THE CHAIRMAN: We were transferred from the other room to this, and I find that the men have been transferred from this to the other section, so that I do not feel like holding you in this section when you can go up and hear what they have to say in the other. But I do feel that I want some men to get something in this section worth while in Ohio next year, and I have talked the matter over with several of them as to the selection of a chairman and a secretary of this section, and their desires were made known to me. Their selections were Col. H. E. Bemis of Ames, Iowa, as chairman and Col. L. A. Merillat as secretary of this section at our next session in Ohio next year. If any of you gentlemen will nominate the gentlemen just named, we will go ahead and have this business meeting and then adjourn. Are there any nominations to be put before the house for chairman for our next session? The name of Dr. H. E. Bemis has been proposed.

(On motion, seconded, Col. Bemis was unanimously elected chairman of the section for the next meeting.)

THE CHAIRMAN: It has been moved and seconded that Dr. L. A. Merillat be named secretary of the next meeting. If there is no objection, I will declare him elected.

As I see that there is no paper to be read, I will entertain a motion to adjourn and go where there are papers to be read. It is through no fault of mine, gentlemen, that I did not secure them. (Motion was then made, seconded and carried that the meeting be adjourned.)

FRIDAY MORNING, NOVEMBER 21, 1919

The meeting was called to order at 9:30 a. m., President V. A. Moore presiding.

REPORT OF EXECUTIVE BOARD

THE PRESIDENT: The first thing this morning is the report of the Executive Board.

DR. MAYO: Mr. President, the following applications have been received and favorably reported on by the Executive Board:

Dr. W. G. Reed, Marble Rock, Iowa; L. M. Graham, Iowa; T. H. Ingraham, Jr., Alabama; G. T. Asquith, West Liberty, Iowa; H. H.

Emerson, Little Rock; Hugh F. Walker, Ohio; Lloyd J. Brown, Arkansas; Francis A. Humphreys, Toronto.

The committee recommends that these names be accepted and, in the case of Dr. Humphreys, the By-Laws be suspended and that they be elected to membership. Dr. Humphreys is a 1919 graduate who has been in service.

DR. HOSKINS: I move that the recommendation be approved.

(The motion was seconded and carried.)

DR. MAYO: It is recommended by the Executive Board that the suggestion of the President that a committee be appointed to consider the problem of veterinary medicinal preparations with reference to their approval by a committee of this Association be approved and that the President be authorized to appoint the committee.

(It was moved by Dr. Kinsley, seconded and carried that the recommendation be approved.)

DR. MAYO: The Executive Board recommends that the resignation of Dr. Dalrymple as Editor of the JOURNAL be accepted, and that Dr. J. R. Mohler be elected Editor of the JOURNAL for the coming year, and that the salary of the Editor be fixed at $2,100.

(It was moved by Dr. Kinsley, seconded and carried that the recommendation be approved.)

(Dr. Mayo read telegram from the Montana Veterinary Association, sending greetings.)

REPORTS AND APPOINTMENT OF COMMITTEES

DR. MAYO: I have a report of the Budget Committee. This committee recommends that the special Committee on Abortion Disease be allowed an appropriation of $500, or so much thereof as necessary to carry on their work. This proviso applies to all of these recommendations.

(Dr. Mayo read the report.)

(It was moved by Dr. Kinsley, seconded and carried that the recommendation be approved.)

THE PRESIDENT: The next order of business will be the reports of the committees. First, we will have the report of the Committee on Necrology.

(Dr. Hollingworth read the report, which will be published later.)

(It was moved, seconded and carried that the report be accepted.)

THE PRESIDENT: Is the Committee on Resolutions ready to report?

DR. COTTON: Dr. Cary has the partial reports. I don't think he is ready at this time.

THE PRESIDENT: Is it the desire that we take up the program and hear these reports a little later?

DR. EICHHORN: Mr. President, in connection with a motion made by Dr. Merillat, I advocate a Committee on Organization of this Association in connection with the International Congress to be held possibly in the year of 1921 in this country. I talked this matter over with Dr. Merillat, and I don't think that he presented the

suggestion in a way so that it could be possible to go ahead with the work and be ready for the International Congress in the year 1921.

In the organization of such an International Congress, it is essential that at least a year and a half or two years' time be given to a committee to organize the work so that it would be in all respects ready for the completion of the problem, and therefore I think it would be very essential that if a committee be appointed it be such that it can go ahead with the permanent organization of this kind, and that it be authorized by the Association here to conduct the official correspondence with the authorities in Washington and also with the authorities in Europe.

I think immediate steps should be taken by such committee for obtaining permission to hold the meeting in the United States, and I make a motion that a committee be appointed at the present time, which will serve later as a nucleus for the permanent organization committee, and that the committee be authorized to immediately correspond, officially, with the permanent committee in Europe, and also with the United States Government, with the view of getting the work started.

THE PRESIDENT: I would say that the motion made by Dr. Merillat, and carried, that a committee be appointed to investigate this matter, I think, will cover the point. It will be up to the committee to make that investigation, and to report next year what should be done.

There have been authorized three committees by the Executive Board or by direct motion from the floor, which I will be glad to announce at this time. The first was a committee to consider the advisability of establishing some definite method of procedure or relationship between the A. V. M. A. and State and local veterinary organizations, and to report at the next meeting as to what can be done. I will appoint W. H. Welch, U. G. Houck, W. H. Dalrymple.

The committee just referred to by Dr. Eichhorn, and authorized by a motion made by Dr. Merillat, to consider the meeting of the International Veterinary Congress, I will announce as L. A. Merillat, A. Eichhorn, J. R. Mohler, D. S. White and the incoming President, Dr. C. A. Cary. I have appointed Dr. Merillat as the temporary chairman of this committee, as he made the motion. I would suggest that the committee meet at the call of the temporary chairman and consider the question of electing their own permanent chairman. I make this suggestion and this appointment of temporary chairman in order not to hamper in any way the work of the committee. It may be found desirable that the chairman be located in Washington, but this entire matter will be left to the committee to report at the next meeting.

The other committee was one recommended by the Executive Board relative to an investigation and report as to the feasibility of establishing a permanent committee for the investigating and reporting of unofficial veterinary remedies, that is, remedies for therapeutic

and prophylactic purposes. I will appoint on that committee H. J. Milks, Dr. Cox, and Dr. Bergman. I think that concludes all of the committee appointments.

We were obliged to abandon a part of our program on Tuesday. The first paper on the list that was omitted was that by Dr. Welch, which I believe he wishes to be placed at the end, and Dr. Baker, who has a paper on "Sheep Practice," is not here. There is a special request that the paper of Dr. Watson be presented. I will, therefore, call upon Dr. Watson to present his address.

NOTICE OF AMENDMENT TO CODE OF ETHICS

DR. KOEN: Before the paper is presented, I have a notice I want to read.

(Dr. Koen read the following notice relative to a proposed change in the Code of Ethics:)

"I hereby give notice of a proposed change of Section 7, Article 19, of the Code of Ethics, to be presented at the next meeting of the Association."

THE PRESIDENT: That will be referred to the Executive Board, and taken up at the next meeting.

REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION

DR. FITCH: Inasmuch as the work of the meeting so far has been along the line of committee reports, and I notice the chairman of the Committee on Intelligence is in the room, might it not be well to take up that before taking up the papers?

THE PRESIDENT: If Dr. Dunphy is ready to report, we will hear the report of the Committee on Intelligence and Education.

DR. DUNPHY: Mr. President and Gentlemen of the Association, I desire to ask your indulgence in regard to this report, as unfortunately the majority of the committee could not be present and it was left with Dr. Kiernan and myself. Dr. Kierman has been so busy with the duties incident to the Bureau work that we had no time until yesterday to get the report, and fortunately we were unaware of the change to be made in the regular work by making the excursion yesterday and we intended to report yesterday.

(Dr. Dunphy read the report, which follows.)

To the President and Members of the American Veterinary Medical Association:

In submitting the report of the Committee on Intelligence and Education, your committee desires to be pardoned for the brevity of the report, as the details of the work will be filed with the Secretary for the use of the Executive Board. Your committee is handicapped to a considerable degree by the absence of a majority of its members, so that certain phases of the report could not be given the attention that they merited.

From inspections of colleges that have been made and reliable information that has been gained in various ways, the committee is of the opinion that there is still a great effort being made by the

various colleges to keep up to the desired standard, and that veterinary education is gradually reaching a higher plane, which will enable the profession to take its place among the other learned professions and stand side by side with its sister profession, that of human medicine and surgery.

Unfortunately for our veterinary institutions of learning, when our country became involved in the great world war the majority of the students were called to the colors, and teachers and students alike were eager to do their part in helping to subdue the arch enemy of civilization and mankind. As a natural result of these conditions the work of the colleges was entirely disrupted and their endeavors halted to such a degree that several of the schools closed their doors and discontinued their work entirely.

Since the signing of the armistice and the release of many students and instructors the colleges are just beginning to work gradually toward normal conditions, and your committee believes that patient indulgence on the part of the Association toward the colleges is advisable, as the colleges are not alone in this particular condition, for we find public utilities and private business in the same chaotic condition.

The colleges in general are striving to come up to our required standard, and while some are greatly in advance of others, the committee believes that all are doing their best to advance the standard of veterinary education and training.

Since our last report was submitted we find a new college asking for recognition by our Association, the prospectus of which has been submitted to your committee. While the committee has not inspected this institution, owing to the fact that the member of the committee to whom this work was entrusted was not able to meet with us and make this inspection on the way, still the committee has the report of the veterinarian who inspected this college for the Bureau of Animal Industry, and other reliable information that warrants us in recommending it to be placed on the accredited list of our Association for the present term, so that its graduating class of 1920 may be eligible for admission to this Association.

Another matter that your committee desires to direct your attention to is the United States Veterinary College at Washington, D. C., which is asking for reinstatement. This has been an unsettled problem for several years. Your committee, on visiting Washington, found two veterinary colleges in operation, one on the accredited list, but very poorly equipped and adapted for giving a veterinary education in accordance with the requirements of this Association. The other institution had buildings and equipment for carrying on the work, but certain conditions (notably a nonresident dean) did not appear satisfactory to your committee. In view of the fact that the committee was not satisfied with the work of the accredited school an amalgamation of the two colleges was advised, and it seems that when this arrangement was on the verge of completion it fell through, and the committee is advised that the accredited school has

been discontinued. A recent visit by a member of this committee shows that the institution that was not accredited is now in shape to comply with the requirements of this Association, and your committee sees no reason for its not being admitted unless in the judgment of the Association a night school can not keep up to our standard and give satisfactory work.

Another matter that your committee wishes to bring before the Association is the condition that exists at the Veterinary Department of the Washington State University. This college work is carried on at two separate places. The two first years are given at Pullman, the other part of the course is completed at Spokane. The member of the committee who visited this institution found very careless and unsatisfactory work being done at Spokane, and those in charge not keeping in touch with the Pullman division of the department. The instructions given to the students were entirely out of touch with the present-day views of veterinary science. Your committee believes that the teachings given at this place leave the student's mind in a very chaotic state in regard to subjects that are generally accepted as scientifically settled. The committee would recommend that Dr. Nelson be notified by the Secretary that this condition be remedied at once or the college will be suspended from the accredited list.

In view of the facts set forth in this report your committee desires to recommend that a degree of leniency be exercised toward the colleges as far as consistent with the requirements of the Association, while they are recovering their balance after being disorganized by the unavoidable conditions caused by the war.

We would respectfully recommend for your consideration the following colleges to be placed on the accredited list of this Association:

Alabama Polytechnic Institute, College of Veterinary Medicine, Dr. C. A. Cary, Dean, Auburn, Ala.

Chicago Veterinary College, Dr. E. L. Quitman, Dean, 2533 State Street, Chicago, Ill.

Colorado State College, Division of Veterinary Medicine, Dr. George H. Glover, Dean, Fort Collins, Colo.

Indiana Veterinary College, Dr. William B. Craig, Dean, Market and Davidson Streets, Indianapolis, Ind.

Iowa State College, Division of Veterinary Medicine, Dr. C. H. Stange, Dean, Ames, Iowa.

Kansas State Agricultural College, Veterinary Department, Dr. R. R. Dykstra, Acting Dean, Manhattan, Kans.

McKillip Veterinary College, Dr. Charles Frazier, Dean, 1639 Wabash Avenue, Chicago, Ill.

Michigan Agricultural College, Division of Veterinary Science, Dr. R. P. Lyman, Dean, East Lansing, Mich.

New York State Veterinary College, Dr. W. Horace Hoskins, Dean, 26th Street and First Avenue, New York, N. Y.

New York State Veterinary College, Dr. V. A. Moore, Dean, Cornell University, Ithaca, N. Y.

Ohio State University, College of Veterinary Medicine, Dr. C. V. Brumley, Acting Dean, Columbus, Ohio.

St. Joseph Veterinary College, Dr. E. A. Logan, Dean, 9th and Mary Streets, St. Joseph, Mo.

University of Pennsylvania, School of Veterinary Medicine, Dr. William J. Lentz, Acting Dean, 39th Street and Woodland Avenue, Philadelphia, Pa.

Ontario Veterinary College, Toronto University, Toronto, Ont., Canada.

Texas Agricultural and Mechanical College, School of Veterinary Medicine, Dr. M. Francis, Dean, College Station, Texas.

The following colleges have established the four-year high-school entrance requirements:

Alabama Polytechnic Institute, Chicago Veterinary College, Colorado State College, Indiana Veterinary College, Ohio State University, Iowa State College, Kansas State Agricultural College, Michigan Agricultural College, New York American Veterinary College, New York State College, State College of Washington, Texas Agricultural and Mechanical College, United States College of Veterinary Surgeons, University of Pennsylvania Veterinary College, University of Toronto Veterinary College.

McKillip, St. Joseph and Cincinnati Veterinary Colleges have not yet adopted the standard. McKillip and St. Joseph have adopted the four-year course but for the present year have not adopted the four-year high-school requirement for entrance.

Owing to certain contingencies that may arise, the committee deems it advisable to recommend that in case a student having the requisite number of credits has entered a school that is not on the accredited list and taken his first year work, in case of failure of the school to become accredited, or in the event of its closing, the said student may be taken into an accredited college to complete his course without prejudice to the institution.

In case of students entering a college that requires only a three-year high-school entrance admission, such student should be allowed, if he desires, to finish his course in an accredited school without prejudice to the school, but his admission to the A. V. M. A. must be determined by a special act of the Association.

Your committee also desires to make another recommendation which we believe will appeal to the patriotism and fellow feeling between friends and allies in general, after the greatest war of the world, where the cause of democracy, human freedom and protection of the weak was arrayed against autocracy, cruelty and semi-savagery, and, thank God, came out triumphant. This committee recommends that the rules be suspended and eight distinguished gentlemen be elected as honorary members of this Association, namely:

Major General M. W. Ireland, Washington, D. C., Surgeon General U. S. Army.

Major General Sir Frederick Smith, K. C. B., London, England, former Director of the Royal Army Veterinary Corps.

Major General Sir Robert Pringle, C. B., D. S. O., former Director General of the Royal Army Veterinary Corps.

Major General Sir S. J. Glenkinsop, K. C. B., England, Director General of the Royal Veterinary Corps.

Major General Sir John Moore, K. C. B., England, Director General of the Royal Army Veterinary Corps in France.

Brigadier General Frey, France, Director General of the French Army Veterinary Corps.

Colonel C. F. Morse, Washington, D. C., Director Veterinary Corps, U. S. Army.

Colonel J. J. Aitken, England, Member Royal Army Veterinary Corps, delegated to assist in organizing the Veterinary Corps of the U. S. Army.

These distinguished gentlemen have been vouched for by the following members of our Association: C. J. Marshall, Ray J. Stanclift, D. S. Tamblyn and P. A. Fish. We sincerely hope that the Association may see fit to honor them with election to this organization.

Respectfully submitted.

GEO. W. DUNPHY,
Chairman of Committee.
J. A. KIERNAN.

DISCUSSION OF REPORT OF COMMITTEE ON INTELLIGENCE AND EDUCATION

(Dr. Hoskins moved that the report be received and the recommendations be taken up separately. The motion was seconded and carried.)

DR. DUNPHY: The first recommendation in the report would have reference to the United States Veterinary College being admitted to this Association.

DR. ERNEST: With reference to the committee's report on the United States College, I would like to make a motion that that report be accepted with a provision that the Executive Board prescribe the time regarding night classes conducted at that institution. The report of the committee last year made no mention of a night course being disapproved by the A. V. M. A. The school was an applicant for recognition at the conference in Philadelphia, and the trustees have endeavored to comply with the constructive criticism offered in the report last year and are again applicants for recognition by the Association. The report recommends that this recognition be granted, however, with the provision discussing the night course. In fairness to the institution it would seem that recognition should not be withheld now, if the requirements or the criticisms offered by the committee last year have been met. I ask and move that recognition be granted this college, with the understanding that the Executive Board notify the institution as to when day classes shall be started, if that is deemed desirable by the Executive Board.

DR. HILTON: As the Association is taking as its object the approval of veterinary colleges, I am opposed to putting a college on the accredited list which gives hours of instruction from 5 to 10 in the evening, when the students attending that college are, during the daytime, engaged in other business; that no matter what sort of faculty it has, it can not give a satisfactory veterinary course, and I think if this Association places that college on the accredited list, it is going back 50 years. That means that under those conditions it can not give the proper veterinary training in the institution.

DR. ERNEST: May I again ask indulgence? This institution has been in existence since 1894; almost 26 years have been put in by that institution in educating veterinarians. Before the Executive Board I had the pleasure of presenting the records of those men who had gone out. I ask of anyone familiar with the affairs of the livestock work of the State, who are familiar with the work of those practitioners in that State, of those men that had to do with army service, which accepted pretty nearly 25 per cent of the total living graduates of this institution in the United States, of the men engaged on the State boards who have had to examine these men—I appeal to you, gentlemen, that in fairness you can not prescribe that you shall not recognize this institution from the fact that they have conducted night courses. For these twenty-some years these men have gone out side by side with other men and have made good—the proof of the pudding is in the eating. I ask favorable consideration of my motion.

DR. STANGE: It doesn't seem to me that the success of the old graduates of this institution has much bearing on the present requirements. We have an institution that graduated the first class in 1880. We have a large number of prominent alumni among these older graduates, but I don't believe there is one of those alumni or a single member of the faculty that would have the poor judgment to come before an association of this kind and ask for recognition if we still pursued the same kind of a course that we did when those men entered the institution. If we are going to make progress we have got to consider schools on the present basis and how they are meeting present requirements. I don't think what the old alumni did has any bearing on the question at all; it is the question of what the alumni that graduate from this time on are going to be. That is the question that concerns us, and it seems to me that the members of this Association ought to consider seriously whether it is possible to turn out men who are earning a livelihood during the day and attending schools during the evening. We are getting a wide gap, it seems to me, between such requirements and those of State institutions. Three hours' labor and one hour's lecture! How these men can take a 4 years' course and work in those hours or anywhere near the hours required by other institutions, I can't understand. It seems to me, if we are going to allow night school for giving this limited amount of work, they ought to have a longer course.

DR. KINSLEY: The committeemen of the Intelligence and Education Committee did not state the present requirements for matriculation for the school in question, and from information obtained in the Executive Board, we were informed that the requirement for this year's matriculation was three years of high school. It seems to me that automatically eliminates the school from recognition, as the requirements for school is four years of high school. Gentlemen, we have been hearing at this meeting and at several previous meetings the standing of our profession compared to the standing of other professions. Our Committee on Reconstruction made a strong point of educational requirements, particularly of the matriculation at veterinary colleges being one of the handicaps, if not the principal handicap, of recognition of our profession. It seems to me we are not in position to accept this school on present matriculation requirements.

DR. FISH: It seems to me it is very important for this Association to keep in mind that in educating a veterinary student it is the prime business of that student to attend the course during the daytime when it is given. As I understand it, in regard to the institution, veterinary education is a side issue, that the students who attend there really have some other functions during the daytime and then during their leisure time spend that in the desire for a veterinary degree. It seems to me that it is putting it out of order. We want to emphasize that the student is in earnest and wants to be a member of a learned profession. He ought to give all the time to it required by the curriculum.

DR. DUNPHY: In defense of the committee making this recommendation, I might say that two members of the committee that were here considered this. We looked at it from that very angle and we have discovered that in certain State colleges young men were working part of their way through to a considerable extent. For instance, they were doing sufficient work to pay for room and board. The young men who were taking the course in this institution were in a different position. They were working at clerkships, but short day work, as I understood, and they were young men with education enough to admit them into the clerkships through the civil service examination, and we felt that this was an opportunity for a young man who had the ambition to want to better his condition. We felt that the State boards and their own examining boards were now requiring examinations of every man that practiced in the majority of the States, and this examination is good and stiff in our State and I believe it is the same in other States. In our State quite a percentage of the graduates of our State college (and I believe our State college is as good as any) failed to pass that examination.

DR. HALL: I think that there is the question of whether a school of this type turns out men habitually and not accidentally. I believe most of us wish to see the standard in the veterinary profession raised, but if you can take a man and require that he should have

his license education and prerequisite of any school and send him to any school which will give him as many hours of work of as high a grade as is required, you have done all that can be done at the present time. I think that the night school will in time disappear from veterinary education as it has disappeared from the education of the M.D.'s, but at the present time I see no reason why a school of this type should not exist. If it can't give it in four years, then give it in five. Most of you are familiar with the day school. Possibly you do not realize the character of the men in general who attend the night school. The man who is willing to work all day and then work half the night has certain qualities understood. He must have a certain amount of ambition or he would never undertake anything of that sort. As far as the education of these men in the night school in Washington is concerned, I venture to say that on the whole they are as highly educated and perhaps a bit higher educated than the man that goes to the average day school. There is the question, if you can get the work out of a man, the right type of work, require the highest standards of admission, even if you have to have your night school run five or six years. It seems to me, at the present time, we would do well to recognize this, believing that in the future it will drop out of our system.

THE PRESIDENT: The question has been called for.

(The motion was lost.)

DR. DUNPHY: The next recommendation, gentlemen, that the committee has brought before you, is to meet contingencies that may arise owing to the unsettled conditions of the college, and it reads as follows:

"A student entering a college that is not accredited, having a sufficient number of credits to enter, the same number of credits that is required by schools on the accredited list, and has taken his first-year work, in case of failure of the schools being accredited or in the event of its closing its doors, the said student may be taken into an accredited college to complete his course without prejudice to the institution that takes him in."

DR. HOSKINS: Moved.

(The motion was seconded and carried.)

DR. DUNPHY: The next recommendation, gentlemen, I want you to pay attention to.

(Dr. Dunphy read the recommendation, as follows: "In case of students entering a college that requires only a three-year high-school entrance admission, such student should be allowed, if he desires, to finish his course in an accredited school without prejudice to the school, but his admission to the A. V. M. A. must be determined by a special act of the Association.")

(Moved by Dr. Hoskins that it be approved. Motion was seconded.)

DR. FISH: Isn't that contrary to it?

DR. KINSLEY: Does that mean that this matriculant must be a four-year high-school man?

DR. DUNPHY: The first recommendation said he must be a four-year high-school man. The second recommendation was to protect students that had already entered these colleges with a view of eventually being eligible to the B. A. I. There are many students that I wouldn't recommend, but a number of students have entered colleges in this way. What are we going to do with them if these colleges do not become accredited or if these colleges should go out of commission? I was raised a poor boy and I had to work my way through the world, as I was the son of a widow, and my sympathies go out to the boy that has an ambition to rise and get an education, if he happens to be fooled, we might say, or entered into a college of this kind without knowing actually where that college stood. You know that the registrar of any college, when the student comes and presents his credentials and lays down his money, if it is counterfeit, doesn't tell said student that it is all right. They don't say, "We can educate you here, but if you go to another school you will get better prepared," and many innocent students may be caught in the net.

DR. SIMMS: I believe it is an established fact that the law excuses no one. I also feel that our profession is larger than any man or single group. If we have set up a four-year high-school requirement, I feel we are unjust and unfair to the entire profession if we let down the bars just because he happens to have entered this, that, or the other school. I am opposed to this recommendation.

DR. MAYO: Mr. President, it seems to me we are dealing with a problematical situation, that may come up in the future. I think, if it does come up in the future, we ought to deal with it then and not now.

DR. HUGHES: We are not dealing with a problematical question. We are dealing with a question that will confront us during the coming years and almighty soon, it seems to me. I don't want to mention what school I have in mind, but schools are not going to continue to exist under present times and the other schools will all be confronted with this proposition. What are we going to do with the man of the school that is established? In justice, we should make a contingent ruling. We have all suffered during the last three years. I do not want to raise any rancor in this body by citing contingencies that arose or that might have been overcome by a little thought. I might say that I am back of this suggestion. I don't know whether it is right for me to say that. I made the suggestion to Dr. Dunphy that some provision be made for students in this country.

DR. DUNPHY: By way of explanation, I might say that while Dr. Hughes mentioned this to me last evening, this question was brought before the committee by a subcommittee of the Executive Board of this Association. Don't think for the moment that this is the suggestion of any one man. This problem was laid before us by a subcommittee of the Executive Board.

DR. STANGE: I was chairman of that subcommittee, and I think in fairness to the Committee on Intelligence I ought to make a little explanation. As I understand it, the provision is this, that we have sophomores, juniors and seniors in a number of private veterinary colleges today, who entered those schools in perfectly good faith and thought those schools were accredited by this Association. It is not the fault of those students that the school isn't in good standing now. The question is, are you going to ask those institutions to continue running one, two or three classes until they run out, or are you going to make it possible for those students to complete their education in some other institution? It seems to me, if we can prevent students from entering from this time on, in nonaccredited schools, we are perfectly safe. We are simply giving these sophomores and juniors now a chance to complete their education. It seems to me it is on that basis we ought to question it.

(It was moved, seconded and carried that the recommendation be approved.)

DR. DUNPHY: Your attention has been called to colleges that have, at present, adopted the four-year high-school standard. There are two colleges represented that have not adopted that standard at present. That hasn't been considered by the Association, and if that is to be considered, it should be done now, and then I desire the Association to take up the last recommendation. We have asked for a suspension of the rules, or a suspension of the By-Laws, and that these nine distinguished gentlemen be elected to honorary membership in this organization. One recommendation applies to the honorary membership, the other recommendation was for the Association to decide on the two colleges that we reported as complying with the four-year veterinary course but had not yet come up to the standard of the four-year entrance requirements.

DR. KINSLEY: Mr. President, I move you that the recommendation relative to the nine for honorary membership be received and the rules suspended and the men be elected to honorary membership.

(The motion was seconded and carried unanimously.)

DR. FISH: I, for one, should like to be on record that this Association is maintained for a single standard and not a double standard. I don't know what reasons may be involved.

DR. HUGHES: May I ask that the names be read again?

DR. DUNPHY: There are only two schools. The Cincinnati Veterinary School was dropped from the recommendation for the accredited list. The two schools that are at present operating under the conditions that existed with the B. A. I. are the McKillip of Chicago and St. Joseph, Mo.

DR. KINSLEY: It seems to me that we are not in position to act on those schools now. That is a matter of action when the applicants come in for membership. Aren't we anticipating something?

DR. MAYO: Mr. President, does the committee recommend that the Cincinnati Veterinary School be dropped? I move that this action of the committee be approved.

DR. HILTON: Mr. President, before going any further I would like to have that a little more clear. Do you understand that the committee recommends the two schools on the list?

THE PRESIDENT: The committee recommended that the Cincinnati school be dropped from the accredited list and the motion is that the recommendation be approved.

(The motion was seconded and carried that the recommendation be approved.)

DR. DUNPHY: It is also recommended that the Washington State Veterinary College be notified by our Secretary, or that Dr. Nelson, the Dean of that college, be notified by our Secretary, that he must change the conditions referred to in this report or that school will be suspended.

DR. MAYO: I think that the word "automatically" should be put in there.

DR. DUNPHY: I'll accept that.

(The recommendation was seconded and carried.)

THE PRESIDENT: It would seem, Dr. Dunphy, that this Association ought to act officially on the list of accredited schools, as they require some change.

DR. DUNPHY: The accredited schools have been read in this report of the committee.

THE PRESIDENT: This is a recommendation made by the committee that certain schools named in the report should be put on the accredited list. It seems to the Chair that a motion should be made and acted upon regarding that special recommendation.

DR. STANGE: I make a motion that the schools recommended by the committee be approved by the A. V. M. A.

(The motion was seconded.)

DR. MAYO: I think we ought to have in the report of the Association a printed list of those schools that do meet the requirements, because I get many inquiries and they want a list of the accredited schools and I think it is very important that the list recommended by the committee should be read to this Association and go in the records. (Applause.)

THE PRESIDENT: Dr. Dunphy will read the list.

DR. DUNPHY: Alabama Polytechnic Institute; Chicago Veterinary College; Colorado State College; Indiana Veterinary College; Ohio State University; Iowa State College; Kansas State College; Michigan Agricultural College, Veterinary Department; New York American; New York State College; State College of Washington, with a question mark in regard to the action that Dr. Nelson may take; Texas Agricultural and Mechanical College; University of Pennsylvania Veterinary College; University of Toronto, Ontario, Veterinary College; McKillip Veterinary College of Chicago, with a question mark in regard to the entrance examination, and also St. Joseph with the same question mark, which, owing to only two members of the committee being present, should be settled by this Association.

DR. R. C. MOORE: I think the question put before the house a little while ago was regarding future consideration of students in certain veterinary colleges. As that motion was being put, I think as I understand it, two colleges were included in the list to be dropped that I didn't hear in time to make any reply; in fact there was no opportunity to make any explanation to this body. I have been a member of this Association a good many years. Last year we had to meet a condition that was facing the schools. At the Philadelphia meeting there was a recommendation made by the Committee on Intelligence and Education concerning an agreement or an understanding that had been entered into by a subcommittee of that committee that had met in Washington and in conference with the Surgeon General and the Bureau of Animal Industry decided to prescribe what course should be pursued last year and this year as to entrance requirements. That report, as I understand, was adopted by this Association at Philadelphia. After that, there was a recommendation made, I believe, from the committee that the requirements for this year be four years of high school. The B. A. I. circulars came out and they allowed the admission of students on the two-year basis, with the view that the B. A. I. was pressed pretty sorely for men to meet the conditions, and we were in doubt as to what should be done. The Board of Veterinary College Private Schools met in Chicago in May and after an all-day discussion of this problem, into which meeting your secretary was called for what information it could gather from him, and finally after a long session, a motion was made by the Dean of the Chicago Veterinary College and unanimously carried, to follow the requirements of the B. A. I. for this year. When the St. Joseph Veterinary College followed those requirements we stated it in our requirements, a copy of which I have in my pocket. We discussed the reasons why we were following that standard for last year, and, in fact, back of that, had made a good many promises to young men that had to enter the service last year. We adopted that, and in our catalogue I stated emphatically that that was for next year only, put it in capitals. We will meet the requirements of the A. V. M. A. We moved up from 28 weeks of actual teaching time to 32 weeks. We have met you on everything excepting that entrance requirement, and we were in that. I think every reasonable man will agree that the two standards coming up put us in a position that was hard to overcome, and in face of that, Chicago, McKillip and St. Joseph unanimously agreed to accept the requirements of the A. V. M. A. I don't believe it is hardly fair to the student body of that school college that they should be ruled out of the requirements, because of us failing to meet that one condition.

Since I have been in this meeting, members have told me that I said that we would not pay any attention to the immediate requirements at St. Joseph. I want to deny that most emphatically. No such thought ever passed my mind. No such word has been uttered from that institution. I am the sole manager of that institution and

my word goes in everything pertaining to it, and I want to pledge you right here, we will meet your requirements in everything. We would have met them before, but we could not see our way clear to meet them this year, on account of the agreement entered into at Washington and the acceptance of that report of the Committee on Intelligence and Education, and we felt we could not possibly throw down those promises, so we were placed in that dilemma. I will leave this matter in your hands. I believe you are fair dealing people. I don't believe you want to crowd us out of existence. All we ask is an opportunity. We haven't rebelled. We agreed, on the other hand, and published that agreement that we would meet your conditions this year. I didn't understand that this school was put in this movement. I would like to ask you to reconsider that. (Applause.)

DR. CRAIG: I want to rise to make a correction. At that meeting in Chicago, the Indiana Veterinary College voted to adopt the requirements of this Associaion, and we returned to Indianapolis and presented the matter to the Trustees. The Trustees unanimously decided to abide by the rulings of the A. V. M. A. and adopted the four-year requirements.

THE PRESIDENT: I understand that the motion made by Dr. Stange is that it be approved. Is that the correct motion?

DR. STANGE: Yes, sir.

THE PRESIDENT: And the schools with a question mark after them are not included in this motion that is now before us.

(The motion was seconded and carried.)

THE PRESIDENT: Now the question is on the schools with a question mark, as suggested by the chairman. What shall we do with those? Will Dr. Dunphy please name the schools in question?

DR. DUNPHY: Washington State Veterinary College, on account of the conditions that existed, where the last two years were given. McKillip Veterinary College and St. Joseph Veterinary College, that had not yet come up to the four-year high-school standard, but were working under the standard of the B. A. I.

THE PRESIDENT: The recommendation before the house without a motion is on the acceptance of the two schools just mentioned and putting them on the accredited list.

DR. R. C. MOORE: Might I be permitted to make a motion that the St. Joseph Veterinary College be accredited on this, with the understanding that we meet every requirement?

(The motion was seconded and carried.)

DR. HUGHES: Mr. Chairman, I desire to call attention to the fact that at this meeting that was announced the Chicago Veterinary College was represented and that any representatives of that college must be ratified by the faculty. As soon as the motion was adopted by that meeting it was voted unanimously and decided to require the four-year high-school course. I want a little explanation as to that. Did other schools, not doing the same thing, bring it up, or did some

one man act in a dominant fashion and put the thing over? I would like to know something along those lines.

DR. KINSLEY: I rise to a point of information. We want to be straight in the future. We have just passed a motion that requires a suspension of the rules. We have on our records the requirements, as I understand it, and I don't see how they can be passed on without a suspension of rules.

DR. STANGE: I move that we reconsider the last motion that was passed.

(The motion was seconded by Dr. Fitch and carried.)

DR. R. C. MOORE: Mr. Chairman, before we go further, I want to be clear on one statement of Dr. Hughes. I was representing the St. Joseph Veterinary College with full authority. Whatever I agreed to would be the action of that board. There were five members of the faculty of the Chicago Veterinary College present and the Dean included in the number.

DR. STANGE: I move that the school considered in that motion be not put on the accredited list. In making this motion I think we must be fair with everybody. We have just refused one school consideration on an attempt to make good. I don't see why we should turn one down and accept another. I think we ought to cut the line sharp for everybody, and if we are going to give one consideration, give it to all.

(The motion was seconded.)

DR. STANGE: I had in mind the two schools that did not meet the entrance requirements.

DR. R. C. MOORE: I do not like to call attention to defects anywhere, but I read a day or two ago in one of the publications wherein they stated that the veterinary college would not insist upon the high-school graduation. I want to know whether that is to be taken as violation of these rules or not. That school has been included and accepted.

THE PRESIDENT: You have heard the motion. Is there any further discussion?

DR. COTTON: I wish the Chair would explain the sense of this motion. Everybody is at a loss apparently, as to what we are voting on now.

THE PRESIDENT: The motion, as the Chair understands it, is this: The Committee on Intelligence and Education has recommended the acceptance of two schools, St. Joseph and McKillip, who are not living up to the entrance requirements provided for in the eligible list of colleges for this Association. It has been moved that this recommendation be rejected, that is, that these two schools will not be placed on the accredited list. That is the motion as I understand it, open to correction if I am wrong. Is there any further discussion?

(The motion was seconded and carried.)

THE PRESIDENT: That concludes, I think, the recommendations of the Committee on Intelligence and Education.

DR. W. M. BURSON: I represent the Veterinary Division of the State College of Agriculture of the University of Georgia. We are giving veterinary degree work to three classes, freshman, sophomore and junior. During the previous three years' sessions we have given the freshman and sophomore work only. Our plan is now to continue our students through to graduation; we expect to give senior work beginning next year, that is, the college year, 1921, and hope to have men ready for graduation in June, 1921. I request an investigation by this committee.

THE PRESIDENT: That will be referred to the Committee on Intelligence and Education.

Shall we finish these committee reports before we go on with the papers? Is the Committee on Resolutions ready to report?

(Dr. Cary was not present.)

THE PRESIDENT: I think that concludes the committees, with the exception of the one on Resolutions, which I will call for a little later.

DR. J. G. WILLS: If I am in order, I would like to state that since the report of the International Committee on Bovine Tuberculosis, two members of the committee, who were unable to be present, have sent communications which were received after the report was made. One of them is from the lay member of the committee, Mr. J. J. Ferguson, and the other from Dr. Traum. The letter from Mr. Ferguson deals with a new phase of the tuberculosis problem, one which has not received general recognition, and if the Association deems wise the committee would recommend that these two letters be received as supplementary to the report to the committee and made use of by the committee next year when the personnel is known. It deals in general with the same phases of the question as reported by the committee on Monday. The reference, however, by Professor Ferguson is somewhat different, and if the Association wishes, one paragraph will explain what he has in mind, if they care to hear it. Otherwise, I would move that it be placed on file.

(The motion was seconded and carried. The communications referred to were appended to the report of the committee and appear in the proceedings in the JOURNAL for February, 1920, pages 551–553.)

PRESENTATION OF PAPERS

THE PRESIDENT: We will revert now to the reading of the papers, and I will call upon Dr. Watson for his paper on "Ulcerative Lymphangitis."

(Dr. Watson read his paper, which will be published next month.)

THE PRESIDENT: Shall we have Dr. Cary's paper read?

(Dr. Cary requested that his paper be read by title only.)

THE PRESIDENT: The next paper would be "The Economic Production of Hogs in the South," by Prof. D. T. Gray. I have a note asking that his paper be read by title and published in the proceedings.

The next is a paper by Drs. Ransom and Hall on "Parasitic Diseases in Their Relation to the Live-Stock Industry of the Southern United States."

(Dr. Hall read this paper, which will be published later.)

THE PRESIDENT: The next paper is by Dr. P. J. Orchard, of Baton Rouge, La., on "Strongylidosis in Horses and Mules."

(Dr. Orchard read his paper, which appears elsewhere in this issue of the JOURNAL.)

DR. HADWEN: I would like to say a word of appreciation for the paper we have just listened to. I am certain that we have been neglecting internal parasites too much. Looking back to ancient history, one sometimes sees a great deal about treatment for worms. I think we have paid more attention to the parasites we see externally on the skin, and yet they are doing just as much harm internally. It is a self-evident thing to me, when one compares the health of the city horse to the horse which is owned by the farmer, and I think the answer is very easy. One animal is apt to contaminate himself out in the field and the other is fed indoors and doesn't get a chance to infest himself in the same degree.

I have one word to say about treatment which has been mentioned in the paper we have heard. I think it is very plain that one treatment is not sufficient to cure a case of parasitism in a horse, as we know that so many of the parasites are protected by the body itself and can not react to the treatment. Nevertheless, in the suitable period of treatment of the parasites which were protected in the intestinal mucous membrane, it would then be subjected to the action of the drug we have given. (Applause.)

DR. ORCHARD: In answer to that, gentlemen, we treat so few, two, three, and as high as ten times, and it is pretty hard to get a planter to lay his mules up. He will give you a day or a day and a half. He is generally busy the year through. Of course the method weakens them a good deal and it is dangerous to treat them too quickly.

DR. HALL: I wish to congratulate Dr. Orchard on the paper he has presented and to say that it is a very pleasing thing to find that a number of the veterinarians here in the South are making these observations which are very badly neglected. The confirmation from the practitioner was generally preached by the parasitologists, a most gratifying thing, most of all to the laboratory man.

As far as his remarks on anthelmintics are concerned, it is too big a topic to discuss at this time. You have a practical proposition before you. The planter has his animals where they are being constantly reinfested, and, as Dr. Orchard has said, he doesn't know what to do. He is between the devil and the deep blue sea. He can either put his animals up and treat them as a routine procedure a number of times a year, or he can let them go until it appears that they are going to die anyway, and then treat them, and that is the wrong time to treat them. All anthelmintics are poison. They must all be used with caution, and in plenty of cases the anthelmin-

tics which will be administered to your horse will kill him when you have waited until it is a good clinical picture of parasitism.

If you will consider what was said in the paper by Dr. Ransom and myself, you will realize that it is true that the Southern live-stock owner must assume, as a matter of course, that parasites are always present in sufficient number to be doing some damage, and that if they are neglected they will live to the point where they will cause serious losses by death as well as by disability. The drastic treatments which the gentleman referred to, I ought to defend in this connection, because I am more or less responsible for most of them in the present condition of the subject. Many of them are old treatments. The things which he has recommended are based on clinical experience and are more or less imperfect, naturally. Some of these drugs are anthelmintics of, as he says, years of standing. I am sorry I can not accept the good testimony of anthelmintics and of the value of the drug, but in my opinion, anthelmintics are not worth a continental. It is simultaneously established that some of those drugs are as good as clinical experience has shown them to be, and I have therefore regretfully come to the conclusion that there is no way of judging drugs except by experimental tests. This is not any reflection on Dr. Orchard's competent work. The proof of the pudding from the practitioner's standpoint is the recovery of the animals. I would suggest that instead of the Southern mule owner waiting until his animals show clinical pictures of parasitism he may give treatments through the year or take the consequences. (Applause.)

REPORT OF COMMITTEE ON RESOLUTIONS

THE PRESIDENT: Is there any further discussion? If not, we will now have the report of the Committee on Resolutions.

(Dr. Cary read the report of the Committee on Resolutions, submitting the resolutions which follow.)

Correspondence Schools

Whereas, There exist certain correspondence schools purporting to give a training in veterinary science by mail and which, after receiving a certain fee, grant a diploma or the so-called degree, under which the recipients represent themselves as qualified veterinarians and practice quackery, causing endless dangers to the live-stock interests of the Nation;

And whereas, Such schools have been abolished in the various States, yet still exist in one province of Canada, from which their literature is distributed:

Therefore be it resolved, That this Association impress on the Minister of Agriculture of Canada the necessity for the immediate investigation of the claims and practices of correspondence schools purporting to give a veterinary education by mail.

That we further urge all the State veterinary examining boards to prosecute and eliminate the so-called correspondence graduates.

Horse Publicity Association

Resolved, That we recognize and approve the movement to maintain the horse and restore him to his proper sphere in the field of commerce and service of our country.

We pledge our interest and support to the Horse Publicity Association of America created in New York City October 30–31, 1919, by all the allied interests including the veterinary profession and humane organizations. We recommend to our members that they give it their helpful support in their respective States.

Surgeon General, U. S. Army

Resolved, by the A. V. M. A. in convention at New Orleans, La., That we express to the Surgeon General of the United States Army our appreciation of the confidence he has shown in the service rendered by the members of our profession in their unselfish and patriotic efforts, and we pledge ourselves to sustain him in the reorganization of the Veterinary Corps of the Medical Department.

Eradication of Foot-and-Mouth Disease

Whereas, The Bureau of Animal Industry has formulated a definite plan of organization for the controlling and eradication of an outbreak of foot-and-mouth disease should it again make its appearance in this country, this plan being based upon the successful eradication of former outbreaks:

Therefore be it resolved, That this Association indorse this plan as outlined by the Chief of the Bureau of Animal Industry;

And be it further resolved, That a copy of this resolution be sent to the Secretary of Agriculture and the Chief of the Bureau of Animal Industry.

Eradication of Tuberculosis

Whereas, The Bureau of Animal Industry has wisely and conservatively postponed the problem of eradicating tuberculosis until the opportune time, and at this time has decided upon a wise plan through the accredited-herd system:

Therefore be it resolved, That this Association indorse this wise and successful movement of the Bureau of Animal Industry in this direction;

Be it further resolved, That a copy of this resolution be sent to the Secretary of Agriculture and the Chief of the Bureau of Animal Industry.

Resolutions of Thanks

Resolved, by the A. V. M. A. in convention at New Orleans, La., That the members hereby extend to the local Committee on Arrangements a most hearty vote of thanks for their splendid receptions and entertainments;

That we are most thankful to the press for its work in giving publicity to our meetings;

That we are grateful to the manager and owners of the Grunewald Hotel for the acceptable manner in which they have catered to the needs and accommodations of our members;

That we recognize the faithful and efficient service of the retiring officers and hereby tender them our sincere thanks.

Whereas, Dr. Dowling, of the State Board of Health, has furnished this meeting with his fully equipped stereopticon;

Therefore be it resolved, That the Secretary express to him our great appreciation for his valuable assistance.

Whereas, The Pitman-Moore Company gave the members and friends a most delightful boat ride on the great Father of Waters;

Therefore be it resolved, That we most graciously thank them for this most enjoyable trip and the many entertainments given to us on the boat.

C. A. CARY, *Chairman*,
CHARLES E. COTTON,
C. D. MCGILVRAY,
OTTO FAUST.

REPORT OF AUDITING COMMITTEE

The Auditing Committee submitted the following report:

The receipts and disbursements as recorded in the Secretary's books were checked and found to be correct.

The Treasurer's report as submitted to this Association is found to be correct with the exception of a typographical error which was mentioned by the Treasurer and occurs on page 7, line 2, of the report. The figures should read $28 instead of $58. The footings and balances are correct as stated in the report.

H. R. RYDER,
L. ENOS DAY,
W. H. ROBINSON.

FRIDAY AFTERNOON

The meeting was called to order by President V. A. Moore at 2 o'clock.

PRESENTATION OF PAPERS

THE PRESIDENT: The first paper is by Dr. E. D. King on "Poisonous Plants of the South."

(Dr. King suggested that his paper be read by title only.)

THE PRESIDENT: Dr. King wishes his paper to be read by title. I think it would be well for him to give us a brief summary.

(Dr. King read his paper, which will be published later.)

DR. HADWEN: I didn't catch what he said about screenings. We have had a good deal of trouble on our side of the line in the last 2 or 3 years through the billets. They have been breaking up the

screenings and have given some trouble. We tried a few experiments with the seeds and it takes a very small percentage. I think it is a very important question and that the profession should take up the poisonings from these screenings which are so often mixed in with apparently harmless feed.

DR. SIMMS: We have had poisoning of poultry. We have found the corn cob very prevalent in these feeds that have been mixed with screenings. When the feeding is done by hand the corn cob will be removed and the feed given without bad results. The report was quite common all over the State, because men were using everything for feed. The birds seemed to die very quickly after they began to show symptoms, and where treatments were not successful the only thing seemed to be to remove the cause.

THE PRESIDENT: If there is no further discussion, we will take the next paper, "The Eradication of the Tick in the South," by Dr. E. I. Smith.

(Dr. Smith read his paper, which will be published later.)

THE PRESIDENT: The next paper is by Dr. Harry Morris, of Baton Rouge, on "Some Carriers of Anthrax Infection."

(Dr. Morris read his paper, which appeared in the JOURNAL for March, 1920.)

THE PRESIDENT: This paper is open for discussion.

DR. EICHHORN: It is very interesting, no doubt, to those who have anything to do with anthrax control, the many avenues and methods by which this disease may be spread, and I think we are now more enlightened as to how to guard against the different manners of infection.

With regard to the assertion of Dr. Morris about dangers of infection from bovine vaccination, I am of the opinion that at times it may cause death of the animals vaccinated; nevertheless the benefits accruing from the vaccines are so many that we must not lose sight of the benefits which come from this bovine vaccination. As pointed out, the old vaccines placed on the shelf for weeks, months or a year become absolutely inert, and naturally a more effective product had to be sought, and this anthrax vaccine had to be developed. I believe it is necessary to exercise greater precautions in handling anthrax vaccines, but from my own experience I do not think it is possible to start any outbreaks of any consequence from vaccination; that is, if the animals should die from the result of vaccination, the disease will not become virulent. This has been proven by many workers abroad.

I personally believe that in the distribution of any anthrax product precautions must be exercised, and I am sure that the manufacturers would readily accept any proposition by which these products may be effectively controlled; but I want to point out that it would be harmful to make it possible that the product should not be easily accessible to the users; that is, if an outbreak occurs, not too much red tape should be placed in the way of those who want to obtain it immediately.

THE PRESIDENT: Are there any further remarks or discussions? If not, we will call for the next paper by Dr. Burson, on "Some Observations on Veterinary and Live-Stock Conditions in the South."

DR. W. H. BURSON (Athens, Ga.): Mr. Chairman, I would suggest that, as my paper does not contain anything especially technical and a good deal of ground has been covered by other papers on the program, it be read by title only. I have already turned the paper over to Secretary Mayo with that in mind.

(The motion was seconded and carried. Dr. Burson's paper will be published later.)

THE PRESIDENT: The next paper is by Dr. Bishopp, on "Insects and Their Relation to the Production of Live Stock and Poultry."

DR. F. C. BISHOPP (Dallas, Tex.): Mr. President, I would suggest that my paper also be read by title.

(Dr. Bishopp's paper was called for, and he read it. It will be published later.)

THE PRESIDENT: You have heard this interesting paper. Are there any remarks or discussion?

This concludes the program. Has any member any business that he wishes to bring before the Association before its adjournment? If there is no business, the next duty is the installation of the newly elected officers.

I wish to express my appreciation to the members for their attendance and for what seems to me to have been a very interesting session. I have attended a good many meetings of this Association, and I believe that the attendance today at this hour in the program is one of the largest that I have ever witnessed.

INSTALLATION OF NEW OFFICERS

THE PRESIDENT: I will proceed, if there is no objection, to the installation of the President, and I will ask Dr. Cotton and Dr. De Vine to escort the President to the Chair. (Applause.)

Dr. Cary, I have the very pleasant duty to inform you that you have been elected as President of the American Veterinary Association and that you are about to assume the responsibilities of that office. We are mindful of the great service you have rendered in the South to this Association, and to the country at large through your professional work. I bespeak for you the same co-operation and support of the Association that it has given its Presidents in the past. It is a distinguished privilege to hand you the gavel of this Association, the implement symbolic of your office, and with other officers now retiring to return to the ranks of the work, to do our part, that your administration may be the most successful, the brightest and the best in the history of the Association. (Applause.)

DR. CARY: Members and visitors: I would be most ungrateful did I not recognize or appreciate the honor you have conferred upon me, and I wish to say to you here, one and all, that I am most

thankful to you for it, and hope that I can measure up, in a degree, with my predecessors.

I want you to understand, all of you, that I hope to be, and shall try to be, President of all the organization, all of the American Veterinary Medical Association, that I want to extend to you an invitation to help make the next year the best and the largest in the history of this Association, not for me, but for the Association, and let our motto be, to elevate, push forward, to rise up, to improve, everything that will improve and advance our profession in this country and in all countries. I shall strive with all my might and main to have this motto before me—the Association and its advancement. I shall strive also not to use any personal preferences or dislikes or anything of that kind in my work. I simply want to interfere in no way with the progress of the Association and to help in every way its advancement.

It is needless for me to use up words or multiply words in thanking you, because I realize you all know that from the bottom of my heart I thank you for this honor; but I shall thank you more if, at the end of my administration, we have accomplished something, and it will be done largely through your work and not through mine. I know that no president or chairman can do anything without the help of the individuals of the organization. It is utterly impossible. Therefore I beg for your help and hope you will all put your shoulders to the wheel and push things forward in a way that we have never worked before. Let our old prejudices and dislikes and old fights be laid aside. Let us make this year, this coming meeting at Columbus, the banner year of the organization. Again let me thank you.

I will ask the Secretary to call the names of the Vice-Presidents for installation.

DR. MAYO: The Vice-Presidents are: Capt. Gould, Dr. Eichhorn, Dr. Flower, Dr. Watson, Dr. Cooley.

PRESIDENT CARY: I will ask Dr. De Vine and Dr. Cotton to bring these gentlemen to the front. They don't seem to want to come to the front without assistance.

(The Vice-Presidents were escorted to the front amid applause.)

PRESIDENT CARY: Members of the Association, we want you to look upon and observe the men who are to help and work with us. (Addressing the Vice-Presidents) I want to inform you, gentlemen, that I am going to call on you for help, and if you don't respond, we will send the officers after you. I want you to consider yourselves duly installed as Vice-Presidents of the American Veterinary Association. (Applause.)

It may not seem necessary, but probably is the custom, to install the Secretary, and I presume it is my duty. He is already in office, but I presume, if you will get a speech out of him, we will consider him duly installed. Therefore we will call for Dr. Mayo to install himself with a speech. (Applause.)

DR. MAYO: Mr. President and members of the Association, I

am very grateful to you for the honor that you have again conferred upon me, and I will try to give the Association more efficient service the coming year than I have in the past. I certainly shall do everything within my power to make the administration of our new President a successful one in every way. I want to thank you also for the assistance that you have given me in the past. I know it will be extended also in the future. (Applause.)

PRESIDENT CARY: I am informed that the Treasurer-elect, Dr. Jacob, is not here, but he has been installed and we will declare him in office for the succeeding year.

We are about to close this meeting for the year. Is there any business, unfinished or new, to come before this organization at this time? If, so, let us have it.

DR. HALL: I don't want to take your time more than just a moment, but I have talked to quite a number of men, particularly to the members of the Executive Board and to the former editors, Dr. Fish and Dr. Dalrymple, in regard to adding a board of editors, with the present Editor as editor-in-chief, to the JOURNAL. I believe that would lighten the work of the editor-in-chief and would serve, incidentally, two purposes in doing that. In the first place, it would enable us to select a board of men who are experts in various veterinary topics to whom papers could be referred and thereby save the editor-in-chief a great deal of time. In the second place, it would place upon those men the task of seeing that papers were submitted to the JOURNAL in their lines. That is the way in which the best medical journals are conducted, and it serves two purposes. It not only gives a critical reading, which enables us to select the best papers and preserve them, but it also serves the purpose of securing abundant material, and there are times, according to our former editors, when it has been necessary to publish practically anything that was submitted in order to fill the JOURNAL. Naturally, we don't want the JOURNAL filled in that way if we can fill it in a better way, and I believe that the suggestion should be kept in mind by the officers and acted upon, whenever it is constitutional or permissible, at an early time. I think, in that way, we can fill our JOURNAL up and make it a more efficient organ of the Association. (Applause.)

PRESIDENT CARY: I wish to say in this connection that it would be necessary to have an amendment to the Constitution and By-laws prepared and put before the Association next year.

DR. MAYO: If Dr. Hall will make a motion to change that section of the Constitution and By-laws so as to provide for an associate board of editors, it can then be acted upon at the next meeting, otherwise it will require two years.

DR. HALL: I will adopt Dr. Mayo's suggestion and put that in the form of a motion. I move you that we change the Constitution and By-laws to cover it.

(The motion was seconded and carried.)

PRESIDENT CARY: This motion to amend the Constitution and

By-laws will be prepared in full and in writing, and submitted to the Executive Board for action at the next meeting.

Is there anything else to come before this meeting before it is closed? If not, a motion to adjourn is in order.

Adjournment.

REPORTS OF RESIDENT SECRETARIES

NEW YORK

One of the most urgent duties of a Resident State Secretary is to procure new members. I must confess that I was very much surprised when I checked up the list of nonmembers of this great body of veterinarians in New York State. As far as I know, a letter and an application have been sent to all these eligibles, and I was also surprised at the few returns received. I will not say that these veterinarians are not progressive, but I will say that they are very careless and do not realize the great benefit that would come by being associated with such a scientific body, the greatest of its kind in the world.

Never in my time have the services of the qualified veterinarian been in more demand than at present in regard to the development of the live-stock interests, and it should not be handicapped by any action, political or otherwise. The great State of New York should be a leader. Those in authority should use all means at their disposal to foster the live-stock industry to its fullest capacity. My opinion is that a great mistake was made when the agricultural law was amended—and I believe that other progressive States that have the live-stock industry at heart, so to speak, think the same also—in placing the State Bureau of Animal Industry in charge of a layman, known as a director. It was a retrograde movement to the veterinary profession in this State. I care not what the qualifications of a man may be, he is not competent to fathom out the problems that are constantly coming up, that live stock are heir to, unless he has received the necessary education of a qualified veterinarian. One to fill this position must be an investigator and also possess executive ability. There are veterinarians in this State who can fill such a position with honor and credit; then why put a layman in charge? How absurd it is, at least to my way of thinking, to have a man dictate along lines that he is not familiar with. I do not blame a layman for accepting the position, but I have no hesitancy in criticising the law, because I believe that politics are at the bottom of it. If this procedure is right and proper, why should a man learned in law be placed at the head of the legal department, why an engineer at the head of an engineering department, or an architect at the head of that department; why not have them all laymen? To my way of thinking, it is two men doing one man's work.

The veterinarian is the guardian of the health of the live-stock, and such being the case, naturally interested in production, and it is up to him to familiarize himself with all the problems

that live-stock are subject to. For that reason, to be associated with a great scientific body like this is an asset to him and is a duty he owes his clients.

The Legislature has authorized $100,000 towards the completion of the New York State Veterinary College at Ithaca. Of this amount $30,000 has been appropriated, the remainder of the authorized amount to follow; plans and specifications have been prepared and work commenced. By this enlargement the facilities of the college will be greatly improved. An amphitheater which will accommodate 300 persons will be one of the improvements. This will be greatly appreciated by members of the profession in the State and visitors who will attend the annual conferences which have become so popular. Under present conditions "standing room only" is a very common occurrence.

I have failed to get any statistics of the prevalence of infectious and contagious diseases in our State, but sheep and swine have greatly increased in numbers; the bovine slightly decreased, but greatly increased in value. The veterinary general practitioner is the one to make it possible for the producer to make breeding a success. There are only a few of our clients who are able to employ those who specialize in diseases of breeding animals, so it is up to the veterinarians who are more interested in general work to become more proficient in this line.

With the increase of sheep and swine, diseases peculiar to them are developing. We must increase our knowledge in regard to protecting their interests, get in touch with whatever literature possible, that is worth while, remembering our duty.

Garbage feeding is popular, due to the slogan, "Save food—don't waste it," consequently hog cholera has become prevalent, but the hog raisers have their herds immunized and that places the losses at a minimum. To show the amount of serum used just in our State, the New York State Veterinary College at Ithaca sent out for the year ending June 30, 1919, 538,420 mils, and no doubt many breeders use serum from other laboratories.

I am looking forward to the time when our investigators will give us something to think about in regard to abortion. That is the disease dreaded today by those who are interested in breeding live-stock. Our clients are constantly asking about this and that preventive. They see advertisements regarding them. Biological laboratories are popping up like mushrooms. Is the wastebasket the place for some of this literature? When will the craze stop? Something ought to be done.

It is absolutely necessary that we should have a supply equal to the demand and when that is brought about, high cost of living is going to be reduced. It is the duty of every one who is in any way connected with production, no matter in what line that may be, to stop, look and listen, act intelligently, and not be led by persons who have not the best interests of the country at heart. This is a very large country and it is capable of raising and furnishing any

of the products that are necessary to sustain life. Our population is increasing and must be fed and clothed, but as we are increasing they should be thoroughly Americanized. It is a crime that our number of illiterates is so large. To make our country a better country to live in, the English language should be more compulsory. The foreigners who come to our land and desire citizenship should understand our language, and to understand that our country is only big enough to have one flag, and that one is the Stars and Stripes, and we veterinarians as educated people should take it upon ourselves to lend a hand and do our duty in this line.

The time is coming when those of us who have not looked forward to the time of reverses, that will surely come, and not formed the thrift habit, are going to be somewhat inconvenienced. To live within one's income is a slogan that would be beneficial for every one to follow, and by so doing business would be greatly simplified.

In the last few years the practice of the veterinarians has greatly changed, due to the motor vehicle, so that it has been necessary for them to take up new lines of thought. That which is the most greatly needed is service. A man to be successful in any line of business or profession, must render efficient service. That is what the public wants today. He must study his clients, as there are no two alike, and live an honorable life, which is the duty he owes himself, family, profession, clients and community.

W. G. HOLLINGWORTH,
Resident Secretary for New York State.

WEST VIRGINIA

During the past year we have not had any serious outbreaks of animal diseases of any kind. We have had a number of cases of hog cholera and swine plague, but our farmers in many sections of the State have learned by experience the value of vaccinating and are doing a great deal of this and have been able to hold in check what might have been more serious losses. The same may be said as to blackleg, for which they have been using the vaccine and preventing outbreaks on infected pastures. Several cases of hemorrhagic septicemia have been reported, also a number of rabies outbreaks, but a strict quarantine soon checked their spread without very serious loss of stock, but I am sorry to say a number of people were bitten and were required to take antirabic treatment. The other diseases, as strangles and shipping fever, were of no serious importance. Our farmers and stockmen are beginning to understand more fully our live-stock sanitary laws and thus are preventing losses that a few years ago were given but little attention, and that prophylaxis is far better than treatment later.

Our State has, with many of the others, co-operated with the Bureau of Animal Industry in the accredited-herd list for the eradication of tuberculosis from our purebred and dairy herds. We have a long list of applicants on the waiting list for the first test, and many herds have been tested so far. But I am very sorry to

report that I am informed that in a number of herds which had been tested and passed the Federal veterinarians are finding from 50 to 90 per cent of reactors. However, this can be very readily accounted for when we learn, as I am informed, that the registered veterinarian making the test would leave the stable man to take the temperatures and then after the injection of the tuberculin would turn this work over to the stable man or an empiric or anyone to take the temperatures and he would come around later and check up and give a clear chart O. K. In this same section of the State the same system was worked in interstate shipments, but this veterinarian, I am informed, has been caught in this deal. There is only one solution and only one way that this can be corrected—that is by his charts not being accepted. If we are ever to get our herds clean we must have the very best, and the veterinarians to do this work on the square and show no favorites. They must stay on the job and see that the temperatures are correctly taken and the symptoms of the cattle observed at the time of making the test, which can not be done by the layman. As far as I can see, there is only one way we will ever reach the goal in eradication of tuberculosis from our heards; that is by co-operation with the Bureau of Animal Industry, for then we know there will be no favorites. We hope by another year to have this work well under way and with the number already passed the first year the rest should be easy sailing.

One of the consulting veterinarians was forced to make one arrest of a person violating a quarantine. He found reactors in this herd and before he could have them condemned and slaughtered as per regulation the owner sold the cattle. Needless to say a conviction was made and a fine of $50 and costs imposed. This will have quite a weight in helping to let the public understand what the State sanitary law means when it is applied to tuberculin cattle and reactors found.

I regret that I have been able to secure but few new members for the A. V. M. A. this year, when we should have at least one dozen.

Very respectfully submitted,

S. E. HERSHEY,
Resident Secretary of West Virginia.

OFFICERS AND COMMITTEES, 1919-1920

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Second Vice-President

E. A. WATSON.....Lethbridge, Alta.

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E. P. FLOWER.....Baton Rouge, La.

Fourth Vice-President

A. EICHHORN .....Pearl River, N. Y.

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A. S. COOLEY.....Cleveland, Ohio.

Secretary

N. S. MAYO.....Chicago, Ill.

Treasurer

M. JACOB .....Knoxville, Tenn.

Editor

J. R. MOHLER.....Washington, D. C.

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Tait Butler, Chairman; H. D. Bergman, Secretary; Cassius Way, B. T. Simms, L. E. Day

Committee on Legislation

W. Horace Hoskins, Chairman; S. J. Walkley, Secretary; J. P. Turner, T. E. Munce, F. A. Bolser

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Committee on International Veterinary Conference

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(Ex-Officio Membership)

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Section on Sanitary Science and Police

L. Enos Day, Chairman; H. Preston Hoskins, Secretary

Section on College Faculties and State Examining Boards
Reuben Hilty, Chairman; H. S. Murphey, Secretary

Committee on Cooperation of Veterinary Associations
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Committee on Unofficial Veterinary Remedies
H. J. Milks, Chairman; H. B. Cox, H. D. Bergman

Committee on Combining Offices of Editor and Secretary
C. H. Stange, Chairman; T. E. Munce, Geo. Hilton

RESIDENT SECRETARIES FOR 1919-1920

Alabama, E. D. King, Jr., Box 1425, Mobile.
Alberta, M. Gallivan, P. O. Box 567, Lethbridge.
Arizona, J. C. Norton, Washington and 1st Ave., Phoenix.
Arkansas, J. H. Bux, Old State House, Little Rock.
British Columbia, R. Hamilton, 502 Fort St., Victoria.
California, C. M. Haring, University of California, Berkeley.
Colorado, L. L. Glynn, Monte Vista.
Connecticut, M. R. Powers, Norwalk.
Delaware, F. P. Ruhl, Milford.
District of Columbia, J. P. Turner, 918 O St. N. W., Washington.
Florida, Thos. J. Mahaffy, 903 W. Forsyth St., Jacksonville.
Georgia, W. A. Scott, 1407 First Ave., Columbus.
Hawaii, H. B. Elliott, P. O. Box 167, Hilo.
Idaho, W. A. Sullivan, Box 666, Twin Falls.
Illinois, W. H. Welch, Lexington.
Indiana, G. W. Gillie, 412 Calhoun St., Ft. Wayne.
Iowa, H. D. Bergman, 822 7th St., Ames.
Kansas, J. H. Burt, 1800 Poyntz Ave., Manhattan.
Kentucky, D. E. Westmoreland, Owensboro.
Louisiana, E. I. Smith, 603 Roumain Bldg., Baton Rouge.
Maine, W. H. Robinson, 360 Woodford St., Portland.
Manitoba, W. A. Hilliard, 630 McMillan Ave., Winnipeg.
Maryland, H. Young, 515 Charles St., Baltimore.
Massachusetts, J. F. Winchester, 39 E. Haverhill St., Lawrence.
Michigan, E. T. Hallman, East Lansing.
Minnesota, E. B. Carter, 314 N. Chatham St., Austin.
Mississippi, E. S. Norton, Greenville.
Missouri, F. M. Cahill, 9th and Mary Sts., St. Joseph.
Montana, H. Marsh, Helena.

Nebraska, J. S. Anderson, 1817 Douglas St., Omaha.
Nevada, L. H. Wright, University of Nevada, Reno.
New Hampshire, J. G. Whitney, Manchester.
New Jersey, J. P. Lowe, 171 Jefferson St., Passaic.
New Mexico, F. H. Barr, 112 So. Broadway, Albuquerque.
New York, Wm. H. Kelly, 233 Western Ave., Albany.
North Carolina, J. P. Spoon, 317 Worth St., Burlington.
North Dakota, C. H. Babcock, New Rockford.
Nova Scotia, G. Townsend, P. O. Box 76, New Glasgow.
Ohio, F. A. Lambert, 1996 Summitt Ave., Columbus.
Oklahoma, L. J. Allen, 1610 N. Ellison St., Oklahoma City.
Ontario, S. Hadwen, Experiment Farm, Ottawa.
Oregon, B. T. Simms, Oregon Agricultural College, Corvallis.
Pennsylvania, C. S. Rockwell, 5128 Chestnut St., Philadelphia.
Philippine Islands, S. Youngberg, Bureau of Agriculture, Manila.
Prince Edward Island, W. H. Pethick, Charlottetown.
Quebec, A. A. Etienne, 57 Drummond St., Montreal.
Rhode Island, T. E. Robinson, 65 Main St., Westerly.
Saskatchewan, D. S. Tamblyn, P. O. Bldg., Regina.
South America, G. H. Roberts, care Industria Pastoril, Sao Paulo, Brazil.
South Carolina, F. P. Caughman, Columbia.
South Dakota, J. T. E. Dinwoodie, Brookings.
Tennessee, W. B. Lincoln, 1502 Clinton St., Nashville.
Texas, R. P. Marsteller, College Station.
Utah, J. Ernest, 125 E. 4th St., Salt Lake City.
Vermont, A. J. De Fossett, St. Albans.
Virginia, W. G. Chrisman, Blacksburg.
Washington, A. R. Galbraith, Garfield.
West Virginia, S. E. Hershey, Charleston.
Wisconsin, H. Lothe, Waukesha.
Wyoming, B. Davis, P. O. Box 355, Cheyenne.

NOTES FROM THE SECRETARY'S OFFICE

President C. A. Cary has appointed Dr. L. E. Day, of Chicago, a member of the Committee on Intelligence and Education, to succeed Dr. Kiernan, who has resigned.

The Secretary has received inquiries from former members of the A. V. M. A. who have dropped out, some of them for a number of years, and they wanted to know on what terms they could be

reinstated. As a number did not want to come in again as new members, this matter was referred to the Executive Board, and they have ruled that former members can be reinstated upon the payment of $5 back dues, and $5 due for the current year. A letter will be sent out to a large number of those who have dropped out in the past few years, advising them of this ruling.

The Secretary's office has just sent out the final statement to those who have not paid their dues for the current year. Unless a prompt remittance is made, their names will be dropped from the list of active members, and also from the subscription mailing list of the JOURNAL. All members who have not paid their current dues of $5 are urgently requested to send it in at once, as it will save the Secretary's office, as well as the Editor's office, a large amount of work.

According to all reports received from Ohio, the local committee, as well as the veterinarians of the State, are making splendid progress for the arrangements of the A. V. M. A. meeting at Columbus. An attendance of two thousand veterinarians is expected, and the local committee is planning to give them a royal good time. Every member should make his plans now to attend this meeting, which promises to be one of the most important and interesting ever held by the Association. Bring your wife, if you have one. If you haven't, get one before that time.

Dr. C. H. Stange has been elected chairman of the Executive Board of the A. V. M. A.

N. S. MAYO, *Secretary.*

TREASURER'S REPORT

EVERY member of the A. V. M. A. should look over carefully the excellent report of Dr. Jacobs in the February number of the JOURNAL and note how the funds of the Association have been handled and expended.

On page 537 is one item of $73.71 paid to me for which there is no explanation. This was evidently an oversight. This amount was for traveling expenses attending the Southeastern Veterinary Meeting at Birmingham, Alabama, at the request of President Moore, and is the only traveling expense incurred by the Secretary.

N. S. MAYO.

OTHER ASSOCIATIONS

MISSOURI VALLEY VETERINARY ASSOCIATION

THE Missouri Valley Veterinary Association held its mid-annual meeting February 10, 11, 12, 1920, at Kansas City, Missouri. About three hundred veterinarians, many of whom were accompanied by their wives, were in attendance.

A number of exceedingly valuable contributions were offered, and an unusually good clinic, on the third day of the meeting, was well attended. Among those papers presented were the following:

"The Kansas Horse Disease in the Arkansas Valley of Colorado (1919)," by O. B. Morgan. Dr. Morgan discussed the outbreak of this disease during the summer of 1919, showing that it was probably identical with the outbreak observed in Kansas and adjacent States in 1912. He recommended the use of large doses of such purgatives as aloes and Epsom salts in conjunction with large quantities of water, both administered by means of a stomach tube. Oral medication in any other way was condemned as dangerous on account of the pharyngeal paralysis existing. Under such treatment the percentage of recoveries was 61.2.

Dr. G. A. Johnson read a paper on "Veterinary Publicity" in which he suggested various means of enlightening the public as to the ways in which the veterinary profession might be of service, and acquainting it with the many recent advances made in veterinary science. He advocated participation in civic affairs to the end that the veterinarian might become a figure of prominence in his community. He recommended the contribution of articles to local publications along lines which concern the public health and welfare, the whole basis of such efforts being that of giving service.

Mr. G. A. Breon read a very interesting paper entitled "The Relation of the Veterinary Supply House to the Practitioner." He makes the statement that the modern veterinary supply house is honestly endeavoring to serve the veterinarian in every possible way, and to safeguard his interests, but that probably all of them make mistakes through the fallibility of human nature, and through faulty information obtained from those from whom they receive orders. He cited a few concrete cases to show that veterinarians themselves may be responsible for occasional mistakes, particularly in supplying goods to laymen in the belief that they are serving qualified veterinarians. He made a plea for co-operation in the

elimination of undesirable customers, particularly nonlicensed veterinarians.

Among the most valuable papers offered was one by Dr. W. H. Welch, on "Successful Horse Production of the Future." He brought to our attention some very important and new ideas concerning the future of horse breeding. He called our attention to the fact that a tractor on the farm is an impractical and unprofitable machine unless the farming be done on an extensive scale, that the tractor's life is only about 4 years; that its fuel must be imported; that it leaves no progeny and returns nothing to the soil in the way of fertility. While the tractor does not get sick and die, it often does get sick and requires the services of a skilled mechanic, and replacement of broken parts, which in the end cost the owner more than hospital bills for his horses.

Dr. D. F. Luckey, under the head of "Hemorrhagic Septicemia," reported several cases, the diagnosis of which should have been very simple, but which were diagnosed hemorrhagic septicemia by the veterinarian. Among these cases were those of animals suffering from parasites, azoturia and hog cholera. In a separate paper Dr. Luckey discussed the proper dose of tuberculin, emphasizing the fact that animals in which large doses of tuberculin are employed for diagnostic purposes are so saturated with the agent that subsequent reactions are impossible, and thus many dangerously diseased cattle may be pronounced sound. He says there is no exact standard upon which a diagnosis may be made, as much depends upon the previous history, type of animal, etc., and reactions must be judged largely by the use of common sense. He therefore recommends the smallest possible dose of tuberculin, and retesting within 90 days, as the best means of cleaning up tuberculous herds. He has found the ophthalmic test may show reactors when other methods have failed.

Dr. C. D. Folse read a paper entitled "A Few Facts in Connection with the Use of Simultaneous Virus in the Field." This paper may be summarized as follows: Serum made in a licensed plant is potent at the time it leaves the plant; virus made in a licensed plant is virulent at the time it leaves the plant; virus may lose its virulence as a result of fluctuating temperatures at which it is stored, and is generally employed in too small a dosage to insure a correct reaction.

Dr. H. E. Curry read an interesting paper detailing the method used at the Kansas City Stock Yards for immunizing stock hogs.

He also gave figures showing the growth of this work, and its importance to the hog industry. The conditions under which hogs are handled following immunization and shipment are very important factors in the health of the stock, and buyers are given directions as to how they should be handled to prevent loss, and requested to fill out report forms giving data as to the condition of the animals after arriving on the farm. Many cases of loss were shown to be due to unfavorable weather, improper housing, and bad sanitation generally. Bacterin treatment is administered to many animals, which seems to reduce largely the cases of swine plague or infectious pneumonia.

Dr. W. E. King presented some valuable light on the question of the bacterial count in vaccines and its relation to the question of immunity.

Dr. H. A. Hoffman reported the occurrence of malignant edema in swine received from certain localities, following the injection of serum or virus. Numerous animals in the same lot showed up the infection following the use of different lots of serum, and it was evident that the infection was not from this source. Cultures made from skin scrapings confirmed the belief that the infection was carried by the needle through the skin from the superficial layers.

Mr. E. M. Boddington gave some very interesting information on the various State laws which affect the serum industry, showing that in many cases the legislation is purely for revenue or the protection of local producers and in no way beneficial to the hog producer.

Dr. F. Proescher presented a very able paper supplemented by photomicrographs dealing with his studies in hog cholera and bronchopneumonia. This work has been under way for 2 years, and if confirmed by further study and investigation on the part of others will revolutionize the serum industry. Dr. Proescher has isolated from filtered virus 2 organisms, 1 of which he calls the hog-cholera organism, the other the *Bacillus bronchiosepticus*. These are exceedingly minute, the former measuring about 0.1 micron, the latter about four times this size. Both have been cultivated artificially, each producing characteristic lesions and death. These cultures have also been used in producing hyperimmune sera with the usual protective value of anti-hog cholera serum. Neither, however, is capable of producing a product which will immunize against the other. He therefore looks upon so-called hog cholera as being either pure hog cholera, pure bronchopneumonia, or a

mixture of the two, and believes that breaks following vaccination may be due to the monovalent nature of the product used for immunizing. He welcomes full investigation of his work, and it is hoped that by another year other investigators may have confirmed his discovery.

Dr. A. R. Ward detailed studies which he has made in infectious keratitis or pinkeye of cattle. He spoke particularly of the extreme difficulty in obtaining sufficient material for laboratory examination, owing to the sensitiveness of the eye. In his examination of inoculated rabbits, he was surprised to find the hemorrhagic septicemia organism localized in the eye.

Dr. C. E. Salsbery presented the results of investigations on bovine infectious metritis. He supplemented this with drawings of the normal and diseased uterus, showing the changes which occur in cases of endometritis. His observations fit very nicely into the experience of the practitioners who discussed the matter.

Dr. J. F. De Vine was the special guest of the Association, and gave a full discussion of breeding problems of the dairy herd. His work in this line is well known, and his talk was immensely appreciated by all those in attendance. He also gave some interesting demonstrations in the clinic on the third day of the meeting.

Other papers offered, which were read by title only on account of shortage of time, were: "One Cause of Abscess in Vaccination of Hogs," by Dr. B. H. Brooks; "Some Swine Diseases as Seen in the Field," by Dr. P. T. Smith; "Infectious Ophthalmia of Cattle," by Dr. S. L. Stewart; "Meat Inspection," by Dr. W. Parker; "Preparation of Specimens of Laboratory Examination," by W. G. Keehn; "Diagnosis and Treatment of Impaction of the Floating Colon," by Dr. H. E. Kingman.

The clinic on the last day of the meeting included a large number of cases in horses, cattle, sheep and swine. Special emphasis was given to the autopsying of swine suffering from various diseases and to the treatment of sterility in cows. A delightful luncheon was served to the veterinarians and the ladies by the Kansas City Stock Yards Company, who also provided the live-stock pavilion for holding the clinic. Resolutions expressing the appreciation of the Association were adopted.

The banquet on the night of the eleventh was well attended, and a very interesting and entertaining program was rendered.

Dr. D. F. Luckey, State Veterinarian of Missouri for many years,

was the recipient of a brand new Ford sedan, the gift of the various deputies of the State.

Twenty-four members were added to the roll, and the meeting was generally pronounced a great success. The next meeting will be held in Omaha, Nebraska, in July.

R. F. BOURNE, *Secretary*,
Fort Collins, Colo.

ALABAMA VETERINARY MEDICAL ASSOCIATION

THE thirteenth annual meeting of the Alabama Veterinary Medical Association was held at the Veterinary College of the Alabama Polytechnic Institute, Auburn, Alabama, February 26, 27 and 28. This meeting had two distinct subjects up for discussion.

First, tuberculosis with special reference to tuberculin testing, and second, abortion with its allied diseases.

The ophthalmic tuberculin test was presented by Dr. R. S. Sugg; the intradermal test by Dr. I. S. McAdory and the subcutaneous by Dr. J. R. Sullivan. Early, normal and delayed tuberculin reactions were graphically presented by Dr. C. J. Becker, Federal veterinarian in charge of that work in Alabama. Combination tuberculin tests were presented by Dr. L. B. Ernest from the Bureau Office at Washington. Following these papers the discussion involved the whole subject and the technical points affecting a test were brought out distinctly. At the same time there were carried on tests on about eight cattle in the Veterinary Department with the three different methods and combined methods. At the present writing only one of the reactors has been destroyed and postmortem records made. One peculiar thing was brought out in a reacting Holstein bull. Up to the present this bull has reacted some eight to ten times to the ophthalmic test and each time he has given a marked reaction. How many times he will react remains to be seen.

Another thing brought out was accuracy and completeness of tuberculin records in interstate health certificates. Drs. Ernest and Becker conducted a sort of school of instruction, giving out blanks, having these filled in by the veterinarians present and then criticised. This was valuable to the practising veterinarians present.

The causes of abortion were brought out by Dr. C. W. Ferguson; diagnosis of infectious abortion by Dr. I. R. Pollard; the retention of placenta in cows by Dr. J. S. Andrade; treatment of acute metritis in cows by Dr. W. D. Staples and treatment of sterility in cows by Dr. E. D. King. After these papers had been read they

were discussed and some lively discussions were presented. From the various papers and discussions it seemed that the profession is somewhat at sea as to causes, modes of infection and treatment. There seem to be a few things that are fairly well established and they are that infectious abortion should be treated in a manner after other infection, as well as embracing removal of infected placenta or other materials, cleanliness, and to a limited degree, disinfection. The question of immunity or the production of immunity by artificial means seems to be unsettled.

Following this Dr. H. C. Wilson read a brief paper on the differential characteristics of hog cholera, swine plague, etc., and led a general discussion on the methods of handling hog cholera. The discussion was very much like that which goes on at most of these meetings. The next paper was one on the treatment and prevention of intestinal parasites in swine by two senior students of the College, Murray and Neal. The tests they had made were with oil of chenopodium and santonin. The results obtained were very good and the methods used were fully described.

On Friday night the Students Veterinary Medical Association entertained the State Association at a banquet. This was very enjoyable and the banquet speeches were not the least enjoyable part. On Saturday morning, a polyclinic was held at the Veterinary College and various operations and diagnoses were made. Among them were diagnosis and operation of a strangles abscess in the superior cervical lymph gland in a mule, an operation for umbilical hernia in a pig, several cases of lameness, a case of roaring, and also in the morning one of the reacting tuberculous cows was killed at the city slaughter house and the veterinarians present had the advantage of seeing a postmortem inspection.

In the main this was one of the most profitable and instructive association meetings ever held by the Alabama Veterinary Medical Association. The association adopted an emphatic resolution endorsing the movement to reorganize the Veterinary Corps in the United States Army and get it on a professional basis.

Dr. W. D. Staples, of Anniston, Ala., was elected President.

C. A. CARY, *Secretary.*

VETERINARY ASSOCIATION OF NEW YORK CITY

THE regular monthly meeting of the Veterinary Medical Association of New York City was called to order by President MacKellar at 8:30 p. m., February 4, in Carnegie Laboratory. Secretary Crawford

being absent, on motion Dr. R. W. Gannett was made secretary pro tem. The minutes of the January meeting were read and approved.

Dr. Augustus S. Downing, Assistant Commissioner and Director of Professional Education, University of State of New York, spoke on the veterinary profession, its shortcomings, needs and appurtenances. Lack of professional spirit among veterinarians toward the integrity of the profession, was considered by Dr. Downing to be a most serious shortcoming. Illegal practice as a rule does not disturb the veterinarian so long as he is not personally and financially concerned. He voiced in no uncertain language his disapproval of the practice among certain veterinarians of employing an unqualified and unlicensed assistant to practice. The state does not hesitate to revoke the licenses of dentists who thus violate the law and will at the proper time take action against certain practitioners who disregard the law and are disloyal to their profession.

Dr. Downing spoke of the need in the rural sections of the state for the trained veterinarians who would fit in. He felt that there was a rare opportunity for service for the young graduate trained in the diseases of farm animals and willing to work. Loyalty to the profession, love for animals and a desire to serve the community are characteristics much to be desired and encouraged in the young man who takes up the veterinary profession.

In the discussion which followed Dr. Downing disapproved of proposed legislation which would allow any veterinarian who was honorably discharged from the army to practice in New York. He said that such a person should at least be passed upon by the Board of Examiners.

He took issue with Dean Hoskins in the matter of college entrance requirements. Said that ours was a profession and not an occupation, but that as long as certain ones continue to preach low-grade men and low college entrance requirements they could not expect that good men would be attracted to the profession.

Dr. William Herbert Lowe believed that Dr. Downing struck the keynote when he said that the profession needed more men. However, Dr. Lowe was not in favor of reducing educational requirements. He said veterinarians were needed who were intimate with the problems of the stock raiser and able to counsel with and advise him, especially along the line of increased production. He thought something might be done to attract graduates of agricultural colleges to the veterinary profession.

Dean Hoskins spoke of the languishing animal industry, especi-

ally sheep raising. He stated that there were less than 400 new students in all the schools in America which were too few to meet the growing needs of the country. He thought something should be done and that the four-year high school entrance requirements did not meet the situation, as there were only 5 new students at New York University, 41 at Cornell, and 10 at the University of Pennsylvania. He spoke of the valuable work done by the so-called low-grade veterinarian such as the stamping out of foot and mouth disease, the work on Texas fever, and contagious pleuro-pneumonia, the creation of the Bureau of Animal Industry, etc. He said that 70 per cent of membership in the A. V. M. A. was from short-term schools. The Dean pleaded for the boy who was educated in the habits and life of farm animals, but was too busy to obtain the required four-year high school preliminary education.

Dr. Downing, in closing, said that our high school graduates must be made acquainted with the opportunities in the veterinary profession. He said that his experience has been that with any profession the number of students dropped off temporarily when entrance requirements were raised. He stated that we must not take a backward step toward the "hoss doctor" of 30 years ago. That 30 high grade, well trained men were worth more to animal industry than 300 inferior men who might be capable of doing a good deal of damage.

On motion, Dr. Downing was given a vote of thanks.

R. W. GANNETT,
Secretary Pro Tem.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION

THE Thirty-seventh Annual Convention of the Pennsylvania State Veterinary Medical Association was held in Harrisburg, Pa., on January 19 and 20, 1920, at the Penn-Harris Hotel and House Caucus Room of the State Capitol.

There were several very interesting papers read, among which were the following:

"Some Observations Made in General Practice," by Dr. H. E. Bender, Lititz, Pa.

"Ruminatorics in Impaction and Atony of the Rumen," by Dr. L. A. Klein, Philadelphia, Pa.

"Scope and Policy of the Bureau of Animal Industry, Pennsyl-

vania Department of Agriculture," by T. E. Munce, Harrisburg, Pa.

"Sterility and Abortion Work," by Dr. Cassius Way, Brooklyn, N. Y.

"Tuberculosis Control in Pennsylvania," by Dr. Samuel E. Bruner, Pennsylvania Bureau of Animal Industry, Harrisburg, Pa.

"Differential Diagnosis of Hog Cholera," by Dr. Edward A. Cahill, Indianapolis, Ind.

"Hog Cholera with Special Reference to Differential Diagnosis," by A. Eichhorn, Pearl River, N. Y.

"Hog Cholera Control," by Dr. R. M. Staley, Harrisburg, Pa.

The meeting was well attended.

The following were elected officers: President, Dr. H. E. Bender, Lititz, Pa.; Treasurer, Dr. Thomas Kelly, Philadelphia, Pa.; Corresponding Secretary, Dr. R. M. Staley, Harrisburg, Pa.; Recording Secretary, Dr. C. S. Rockwell.

C. S. ROCKWELL,
Recording Secretary.

COLLEGE OF VETERINARY SCIENCE OF THE STATE COLLEGE OF WASHINGTON

A POST-GRADUATE course for veterinarians was recently held at the College of Veterinary Science of the State College of Washington, covering a period of six days.

The program was carried out without change and was well received by all in attendance.

We were especially fortunate in having with us Dr. John F. McKenna, of Fresno, Cal., to aid with the program and he gave us some very interesting lectures. Doctors Robert Prior, of Yakima and H. A. Trippeer, of Walla Walla, also aided us materially with the program, making it especially interesting and attractive.

Dr. Menig's paper on a new milk fever treatment was very complete and opened an entirely new field for progress along this line of work.

The surgery of Drs. McKenna and Beckmann was very interesting and well performed.

The entire program, in fact, was a great success and was attended by about twenty veterinarians from Washington, Oregon, California and Idaho.

E. E. WEGNER, *Vice Dean.*

COLORADO VETERINARY MEDICAL ASSOCIATION

THE semi-annual meeting of the Colorado Veterinary Medical Association will be held Wednesday, May 26, at Fort Collins, followed on Thursday and Friday by the first practitioners, short course given by the Colorado Agricultural College. This course is given on the request of the Colorado Veterinary Medical Association and is beginning with only a two-day session. We are promised the services of Dr. W. L. Boyd, of St. Paul, Minnesota, who will discuss sterility and abortion. We are in correspondence with other men of national reputation whom we expect to have present.

I. E. NEWSOM, *Secretary.*

NEVADA STATE VETERINARY ASSOCIATION

THE second annual meeting of the Nevada State Veterinary Association was held at the Riverside Hotel, Reno, January 9, 1920. Following a banquet, there was informal discussion of live topics of interest to all present.

This association is urging the establishment of municipal meat and milk inspection for the city of Reno. At present there is no systematic inspection of these products used in the city.

The next meeting will be held in Reno, April 9, 1920.

The newly elected officers are: President, Robert Dill, Reno; Vice-President, George E. Bamberger, Reno; Secretary-Treasurer, Lewis H. Wright, Reno.

L. H. WRIGHT, *Secretary.*

VETERINARY CONFERENCE AT PURDUE UNIVERSITY

A one-week veterinary conference was held at Purdue University, LaFayette, Indiana, from February 16 to 21. Dr. T. H. Ferguson, of Lake Geneva, Wisconsin, and Dr. E. T. Hallman, of the Michigan Agricultural College, East Lansing, Michigan, were the two principal speakers at the conference.

The veterinarians of Indiana who availed themselves of the opportunity to hear these men and see their demonstrations, will not soon forget the many good ideas given them by Dr. Ferguson and Dr. Hallman. This is the second time the Extension Department has had Dr. Hallman in Indiana. The splendid impression made by both the Doctors cause us to hope for another opportunity to bring them back to Indiana.

L. C. KIGIN,
Extension Veterinarian.

NATIONAL ASSOCIATION OF B. A. I. VETERINARIANS

OUR Third National Convention is scheduled to be held in conjunction with the 57th Annual Session of the A. V. M. A. at Columbus, Ohio, beginning August 23, 1920.

All our national officers have mutually agreed to attend the Convention on annual leave and not to charge the Association for any part of their Bureau salary during that trip.

This arrangement has been perfected in the belief that in thus conserving the funds of the National Association, our organization will be in better shape, financially, to do more effective work in our campaign of publicity.

Our National Executive Committee now appeals to all subordinate Associations to arrange to have their delegates to the Columbus Convention donate their time to the Association during that trip, conserving the funds of the subordinate Associations and making more money available for use in conducting the work of publicity.

If all delegates donate their time to the Association it is believed that in many cases subordinate Associations can arrange to be represented at the Convention by regular delegates rather than by proxies, and it is very essential to the genuine success of the Convention that the greatest possible number of regular delegates be in attendance.

S. J. WALKLEY, *Secretary.*

METROPOLITAN DIVISION B. A. I. VETERINARY ASSOCIATION

THE annual meeting of the Metropolitan Division of the Bureau of Animal Industry Veterinary Association was held in New York on April 5, 1920, at which the writer was elected President in place of Dr. J. D. De Ronde, who has ably held this post and rendered valuable service since the organization started.

This meeting was the best attended and the most enthusiastic ever held by our organization, due, no doubt, to the great incentive our new Secretary of Agriculture has given us and more especially to our Chief and the Chairman of our Legislative Committee, who have shown their interest in our welfare and loyalty to Bureau veterinarians.

We now have great leaders and let us back them up to the limit, both morally and financially if needed. I appeal to all B. A. I. veterinarians, especially those not affiliated at present, to get into the nearest local organization and applaud our deeds, and not in silence suffer an adverse faction to gain sway.

Our National President Townsend was present and outlined in detail the great good he purposes to accomplish with the help of us all, and from my knowledge of his loyalty and determination I am confident that what he purposes he will perform.

The Classification Committee did not treat the veterinarian as it should, but from what we hear from the front we believe this error will be rectified and we will be placed where we belong, with other scientific employes; but it is incumbent on each veterinarian to push all the time and we will acquire a great momentum which will show results.

Be ready at all times to interview influential persons in our behalf if called upon to do so.

All New England Bureau veterinarians are invited to affiliate with our association until such time as they form their own local organization. LELAND D. IVES, *President.*

Dr. Charles P. Schneider, of Indianapolis, has been placed in charge of virus-serum control work of the Bureau of Animal Industry at Sioux City, Iowa.

Dr. Thomas J. Ahern, Buffalo, N. Y., and Dr. Walter W. Shartle, Indianapolis, Ind., have been assigned to the federal force of tick eradication at Birmingham, Ala.

The force of tick eradicators at Fort Worth, Texas, has been increased by the assignment of government veterinarians as follows: Dr. Earl L. William from Buffalo, N. Y., and Dr. Jesse L. Shabram, Dr. Walter C. Alvey, Dr. Francis A. Pickett and Dr. Rudolf F. Krenck from Kansas City.

Dr. James E. Shelton, of Arkansas City, Kansas, has been transferred and placed in charge of Federal meat inspection work at Waterloo, Iowa, vice Dr. Walter C. Bower, resigned. Dr. Shelton will be succeeded at Arkansas City by Dr. Frank E. Haworth from Fort Worth, Texas.

Just as we go to press the sad news is received of the deaths of Drs. Joseph Hughes, President, Chicago Veterinary College, and S. E. Cosford, in charge of Bureau field work in Nebraska. Biographical sketches will appear next month.

COMMUNICATIONS

INTERNATIONAL VETERINARY CONGRESS

DEAR DR. EICHHORN:

Since writing to you I have called a meeting of the committee for the Tenth International Veterinary Congress, the committee being still officially in existence.

As you know, the question of where the next Congress should be held can only, by Constitution of the International Congress, be decided by the Permanent Commission, upon which the United States has representatives. The committee felt that they could not express a definite opinion on the question of holding the next congress in the United States until the Permanent Commission—which I understand requires reorganization—had met.

Of course, it will be quite understandable to you that we in this country, and in France and Belgium, have many wounds which are not by any means healed. The committee thought, however, that it would be impossible to take the attitude that an International Congress could be held, without that congress really being international. They thought, moreover, that it would be impossible to hold any congress in which the various belligerents would have to meet each other, not only scientifically, but socially, for a period of three or four years. Having regard to my past experience in organizing an international congress, I doubt if it could be properly done under three years.

A letter has been sent to Dr. DeJong, who expressed doubts as to his own position, asking him to call a meeting of the Permanent Commission, as at present constituted, to consider future congresses. That request practically means that in this country, whatever our personal feelings are, we do not think it practicable to have any international congresses which do not include every nationality.

Whether the French and Belgians will look at the question in this way we cannot, of course, tell, but it will be up to DeJong now, as Secretary of the Permanent Commission, to find out what the feeling is in the various countries.

If I may offer you advice personally of what I gather as regards Europe, I would say that none of the nations concerned are likely to take up a congress for some years. Some individuals have suffered enormously, and the cost of living has hit practically all professional men to such an extent that it is doubtful if many could be

found ready to pay the cost of a visit, such as would be entailed by a visit to the United States. It is even doubtful if some of the governments would willingly send representatives, having regard to the public cries for economy.

All these things considered, I rather think that a congress in the United States at such an early date as you suggest would be very badly attended, not in the least because international veterinarians would not like to visit your interesting country, but because they would find the expenses a burden.

May I express the hope that if the next congress *is* held in the United States, the exchange will be a little better from Europe's point of view, and that if it is not, you will at least have converted the "dry" people, so that we will be able to get some consolation.

Yours sincerely,

STEWART STOCKMAN.

APPEAL IN BEHALF OF PROFESSOR HUTYRA

To the Editor:

Realizing the fact that the name of Professor Hutyra is known to almost every veterinarian in the United States and that through his splendid Textbook on Special Pathology and Therapeutics of Domestic Animals the English veterinary literature has been enriched by one of the most valuable literary contributions, it seems to me that it would be of interest to the profession to learn of the state of affairs which exists in Hungary, where Hutyra has been so active in veterinary education, by publishing the following letter which I have just received from him:

BUDAPEST, Feb. 5, 1920.
VII., Rottenbiller-u. 25.

MY DEAR DOCTOR EICHHORN:

Due to the tremendous depreciation of the value of our money, as well as to the very sad financial situation of our suffering country, it is impossible at the present time for our college to order foreign veterinary periodicals and publications. On the other hand, we feel the necessity of familiarizing ourselves with the literary contributions which have appeared during the years we were isolated from the foreign countries, in order that they may become available to the members of our profession and for laboratory work.

Under this condition, I take the liberty of requesting you to assist us in interesting the publishers of the JOURNAL of the American Veterinary Medical Association and possibly also those of other veterinary periodicals in our cause, so that they may send us the journals and if possible that all back numbers from 1915 be

sent to us in order to complete our files. I can assure you that as soon as conditions will warrant it, we will again regularly subscribe for them. Besides we would be very much obliged if you could assist us in obtaining reprints of any publications on veterinary and allied subjects.

I received the bulletins on hog cholera which were kindly sent to us by the Bureau of Animal Industry and please express to the authorities my heartiest thanks for this kindness.

As I have learned that the second edition of our Special Pathology and Therapeutics has made its appearance in the English language in the United States, we would be very thankful if we could receive a set of the same. At the present time the fifth German edition is in the press and will be ready within a few weeks. It contains very important changes, especially in the volume on organic diseases and in general the new edition is very much amplified.

At the beginning of the world war, being a Hungarian my name was stricken as a member of the Société Centrale de Médecine Vétérinaire and possibly also from the list of the Belgium Academy. I am very much interested to learn whether I can still consider myself a member of the American Veterinary Medical Association of America.

Assuring you beforehand of my heartiest thanks for your efforts and requesting you to extend to my colleagues my highest respect, I am, with very kind regards,

Very truly yours,

PROFESSOR HUTYRA.

Those who participated in the memorable veterinary tour of the American Veterinary Medical Association in 1914 have not forgotten the wonderful, charming personality of Hutyra, as he endeared himself to all those with whom he came in contact on that occasion. He is truly a great man, a credit to the veterinary profession, and has always commanded the respect and love of every veterinarian. It is a pitiful state of affairs that he is now obliged to appeal for publications which might be of value to himself, his co-workers and also to the veterinarians of a destitute country.

Knowing the broad generosity of the veterinarians in America, I am convinced that those who will read the appeal will have sympathy for Hutyra, and if there should be any hatred against those who were instigators in bringing on the great world calamity, no one can have any resentment against a man of Hutyra's type.

Those who have had the privilege of attending the International Veterinary Congresses have observed that the leaders of the veterinary profession of all countries have always gathered around Hutyra, with whom social, as well as professional, intercourse was a revelation. I have freshly in mind my visit to the International

Congress at Budapest in 1905 when in company with our late beloved Leonard Pearson, the greatest of American veterinarians, I spent many hours with Professor Hutyra. It was indeed inspiring to a young veterinarian, as I was at the time, to observe these two great minds discussing veterinary problems, and a remark to me by Dr. Pearson is still fresh in my mind when he stated that, of all the leaders of the veterinary profession, Hutyra is the foremost.

It is not my intention to eulogize this great man, but I simply deemed it necessary to make these remarks as an introduction to an appeal which I am making to the veterinary profession of America for small contributions toward a fund which will enable one of the oldest veterinary colleges to purchase and obtain publications in order that they may keep in touch with the work which is being carried on throughout the world. I also appeal to those who have reprints of their publications available which appeared since 1915, that they either send them directly to Professor Hutyra or to me, and I will be pleased to forward them to him. Those veterinarians who desire to make a financial contribution may send it to me and I in turn will be pleased to transmit it to Professor Hutyra.

I am primarily prompted in making this appeal by my desire to assist a most noble-minded veterinarian in order to enable him to continue to serve his profession as he has in the past. His contributions to veterinary science are of international value and I am certain that those who will bear this in mind will not let their generosity be influenced by any hatred which they may have had for the countries with which we were at war.

Very truly yours,

Pearl River, N. Y. ADOLPH EICHHORN.

[Dr. Eichhorn has well stated the intimate fraternal feeling which is manifested for Professor Hutyra by all veterinarians who have enjoyed the pleasure of his presence. As no action has ever been taken, nor even contemplated so far as we know, by the A. V. M. A., to remove Hutyra from its membership, his name is still on the honorary list, and it will be a pleasure to replace it on the mailing list. Unlike some veterinarians of continental Europe, Hutyra has always shown broad vision and a sympathetic attitude towards the struggles and achievements of the veterinary profession of America. His kindness and helpfulness can now be partly repaid by his American colleagues, by forgetting all political and military issues and taking prompt action on the appeal of Dr. Eichhorn.—EDITOR.]

population of America. L. A. MERILLAT.

DOGS AND SHEEP

To the Editor:

It occurs to me as it has to Dr. Hoskins that the American Woolen Company and the other dog haters who would restore the sheep industry to its former status by trouncing upon the dog would do well to determine just how big a factor the sheep killing dog has been in causing the decline, and it would be interesting to know just how much they have studied the other harmful influences that have operated to this end and what measures have been taken to correct them also.

It seems evident that the campaign against the sheep killing dog is fostered by other motives than that of restoring the sheep industry for one could hardly believe that serious-minded men would pin their faith in this movement as a remedy. What these motives are is not germane to the point at issue but it seems that our idiotic systems of taxation (grabbing where the grabbing is good) is not the least important among them. Furthermore, the natural dog hater who would eliminate this domestic animal from the face of the earth on any plausible pretext is ever ready to champion the cause of the sheep man to further his unjust ends. And we must not forget the zealous sanitarian who would tax the dog out of existence as a carrier of disease. All of these working unconsciously or consciously together find little opposition before our very respective legislators. That the money collected is diverted into other channels I would not dispute with one as experienced with our system of government as Dr. Hoskins but I do know that some of this money goes toward paying for dead sheep *some of which were killed by dogs.*

From many inquiries among farmers of Illinois and Ohio I have yet failed to find a single one who discontinued the raising of sheep for this reason. While I do not assert that none such exist they are certainly few. Sheep were once used to feed off roughage that now goes to the dairy cow, the cheap hill pasture is now under intense cultivation and is too valuable for sheep, and the clearing and woods into which sheep were turned to browse the underbrush while the stumps rotted preparatory to cultivation no longer exist. Hence the farmer on the small farms has gradually turned away from sheep raising as an absolute necessity.

I believe like Dr. Hoskins that the veterinary profession should see that the dog and dog owners get a fair deal and not allow the will of a small organized minority to prevail over the large dog-loving population of America.

L. A. MERILLAT.

MISCELLANEOUS

CIVIL SERVICE EXAMINATIONS

THE United States Civil Service Commission announces open competitive examinations for veterinarian and lay inspector, Grade 1, on June 9, 1920. Vacancies in the Bureau of Animal Industry, in the position of veterinarian at $1,500 a year, and in the position of lay inspector, Grade 1, at $1,080 a year, and vacancies in positions requiring similar qualifications, at these or higher entrance salaries, will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Appointees whose services are satisfactory may be allowed the temporary increase granted by Congress of $20 a month.

The scope and character of and requirements for the veterinary examination are as follows:

Competitors will be examined in the following subjects, which will have the relative weights indicated, on a scale of 100: (1) Veterinary anatomy and physiology, 25; (2) Veterinary pathology and meat inspection, 30; (3) Theory and practice of veterinary medicine, 30; (4) Education, training, and experience, 15.

The applicant must show that he has graduated from a veterinary college of recognized standing or that he is a senior student in such an institution and expects to graduate within six months from the date of the examination. Certification of senior students who attain eligibility will be withheld until they furnish evidence of actual graduation.

The questions may include any subject of an accredited veterinary college course, e. g., anatomy, physiology, chemistry, materia medica, therapeutics, meat inspection; the etiology, pathology, symptoms, and treatment of diseases of domestic or food-producing animals, etc.

Application Form 1312 is required for this examination.

TEST FOR ARMY HORSES

A thirty-mile race over the neighboring country of Virginia with a view to determining the type of horse best suitable for military purposes will be one of the interesting features of the National Capital horse show and military racing meet to be held May 18-22 at Arlington Park, Virginia, across the river from Washington, D. C.

It is certain that a large number of the younger officers of the army stationed in and about the Capital will participate in the event, many of them having already started to get their animals ready for the ride. Those in charge of selecting horses for cavalry and artillery purposes for the United States Army will watch keenly the outcome of the race.

Gen. John J. Pershing and Gen. Leonard Wood, who are vice-presidents of the National Capital Horse Show Association, have always been keenly interested in the raising of the standard of the horse for military purposes. This attitude on the part of the higher officers cannot help but make the test a bitterly contested one.

The race will be started from the grandstand at Arlington Park. The course will be laid out as much as possible along the Potomac River and over those roads least frequented by automobiles. The finish will be in front of the grandstand. The judges will include the best authorities on horseflesh in the Government. It is expected that the military attachés of all of the foreign embassies and legations will watch the event with as keen an interest as that of the United States Army officers.

ADMINISTRATIVE POSITION IN AGRICULTURAL FIELD FOR ANOTHER VETERINARIAN

IT is with great satisfaction that the veterinary profession should receive news of the ability of its members being recognized outside the ranks and activities of the strictly veterinary field. Such a recognition is here reported in the appointment of C. M. Haring, well known member of the A. V. M. A. and its former secretary, to membership on the administrative committee of the University of California, College of Agriculture.

This is one of the largest stations in the United States and the administrative work has been too great to fall entirely on the shoulders of the Dean and Director. The policy has been adopted, therefore, of having a directing head for each of the main subdivision of the work, namely, Resident Instruction, Research, and Agricultural Extension, and Dr. Haring will become the Director of Research of the experiment station.

He has been connected continuously with the University since his graduation from Cornell in 1904, except for eight months spent in travel in Europe and one year in the Veterinary Corps of the United States Army. Since 1910 he has been head of the Division of Veterinary Science. G. H. H.